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NTARIO HYDRO NEWS

year-end message, the general manager sees reason to believe that the present expansion
e business and industrial community will continue well into 1965. This issue reviews highlights
964 and anticipates progress as it is expected to unfold in the year ahead.

JANUARY, 1965

# FOCUS ON '65

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JANUARY, 1965

# ONTARIO HYDRO NEWS

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## THE COVER

There isn't much we can say about this month's cover —except that it sets the theme for the issue—a review and forecast. In addition to its current interest, we hope the issue will serve as a handy reference throughout the year.

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## HYDRO NEWS, VOL. 52, NO. 1

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# FOCUS ON '65

## A REPORT FROM THE GENERAL MANAGER

As we enter 1965, increasing demands for electric energy reflect the continuing buoyancy of industrial production and consumer spending in Ontario. There appear to be ample grounds for confidence that the present expansion in the business and industrial community will continue strongly throughout the new year. Proposed heavy investment in new plant and equipment, for instance, will undoubtedly have a very favorable effect in maintaining desirable levels of employment and consumer spending.

Energy demands in Ontario Hydro's East and West systems, which reached 40.6 billion kilowatt-hours last year, are expected to advance another 2.7 billion killowatt-hours during 1965.

Looking back over 1964, I am sure that the year will be remembered particularly for the tremendous capital expansion announced. To meet accelerating power demands, plans were revealed in 1964 to provide an additional 3,240,000 kilowatts of generating capacity for the province. This alone is more than Hydro's total resources in 1951, and does not



**In this combined review and forecast, J. M. Hambley, general man**

include several construction projects started earlier which will boost capacity by another 2,000,000 kilowatts.

The program announced in 1964 is the largest in Hydro's history and includes hydro-electric, coal-fired and nuclear stations. It is scheduled for completion in 1971.

It is particularly gratifying that an increasing number of Canadian firms are now in a position to accept contracts for the major items of equipment required for our new thermal generating facilities. These large purchases should have a highly beneficial effect on the Canadian industrial and manufacturing enterprise as a whole.

In reviewing operations during 1964, the vital role our coal-burning thermal-electric plants have come to play in helping us meet the power requirements of this province is again a striking feature. Low water levels continued to prevail in Southern Ontario and these stations accounted for 27 per cent of our total generation in the East System. During the year, coal consumption increased to 3,080,000 tons, compared with 2,874,000 tons in 1963. Last year Hydro purchased a total of 3,250,000 tons of coal and we expect to buy 3,500,000 tons in 1965.

The extra output required from thermal-electric stations to compensate for the reduced production from Niagara and St. Lawrence plants as a result of the adverse water conditions necessitated the burning of an additional 1.7 million tons of coal. Some of the deficiency was made up from our interconnections with neighboring system utilities.

Total purchases of power over these interconnections increased in 1964. Much of this energy from outside our system displaced corresponding amounts which we would otherwise have had to produce in our thermal plants at times and under conditions which would have resulted in somewhat higher costs. Transfers from our system during periods of lesser demand were also made, an exchange which works to the mutual advantage of participating parties.

Two projects to improve water flow at Niagara Falls got underway during 1964. When completed, the deepening and clearing of the Chippawa Canal, which feeds into the reservoir of the Beck plants, is expected to increase the output of the two stations by 11 per cent.

A two-mile ice boom was placed across Lake Erie at the entrance to the Niagara River this winter in a joint project by Hydro and the Power Authority of the State of New York. This boom will assist in the forming and stabilizing of an ice sheet on the lake to prevent massive discharges of ice into the river, which sharply curtail power production and damage shoreline installations.

It is noteworthy that in the face of numerous influences tending to force costs upward, the wholesale cost of electricity in Ontario has been remarkably steady over the past decade.

**Hydro, discusses operational highlights of 1964 and anticipates progress as it is expected to unfold in the year ahead.**

Based on 1964 costs, the average wholesale rate to municipalities will have increased only 6.5 per cent since 1953.

Along with other business and commercial firms in Canada, Hydro is constantly searching for new and improved operational techniques which reduce costs and promote even more efficient electrical service. Again, in 1964, much was achieved in this direction, for which much of the credit must go to a loyal and hard working staff, whose efficiency and dedication has played an important part in increasing productivity in recent years.

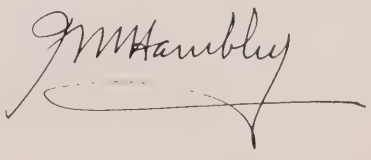
In 1964 the primary demand for power showed a 6.1 per cent increase, which approximates the long-term annual growth rate.

In the years ahead we will continue to seek out new avenues of co-operation with other segments of the electrical industry aimed at stimulating sales of products which utilize electricity so that we may continue to enjoy our appropriate share of the energy market. In our view, these co-ordinated efforts are necessary if we are to maintain stable electrical rates for industrial, commercial and residential customers.

By the end of 1964 our resources totalled 7,776,000 kilowatts. An additional 600,000 kilowatts will be added to our resources this year. We estimate our capital construction costs for 1965 at $150,000,000. We look forward this year to completion of construction of Canada's first full-scale nuclear-electric generating station at Douglas Point. Full power from this 200,000 kilowatt station, which is being constructed for Atomic Energy of Canada Limited, is expected in 1966. Other major projects underway include the thermal plant at Lakeview, the Harmon and Kipling developments on the Mattagami River and the associated extra-high-voltage transmission line.

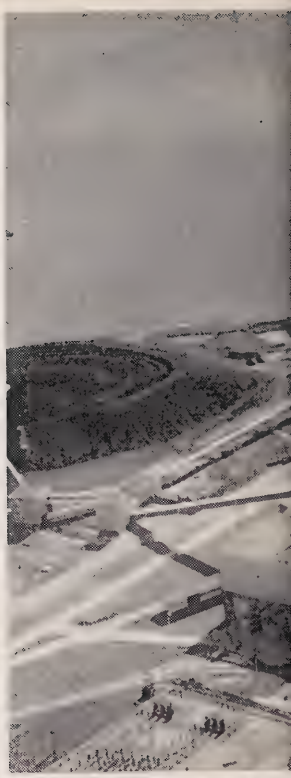
Preliminary work is also underway for the construction of Mountain Chute hydro-electric station on the Madawaska River and Lambton coal-burning station, near Sarnia. Ground clearing work for Pickering nuclear-electric station, east of Toronto, is expected to get underway this year.

Our forecasts indicate that power demand this year will rise about 6.0 per cent, slightly below the long-term average. This is encouraging because growth, particularly in the form of increased consumption per customer, is one of the surest ways of combatting the upward pressure on rates exerted by rising costs of labor, materials, equipment and high rates of interest □



# FOCUS ON COAL







Ontario Hydro is embarked full-sail on its program of transition from water to thermal — charting a course 15 years ahead.

Even if it were economical to develop the few possible waterpower sites left in the province at once — power needs would outpace their production in four years. And Hydro must double its resources every 10 to 12 years.

Already thermal-electric generation accounts for about 27 per cent of the system's dependable capacity. In 15 years the balance will tilt to nearly 70 per cent.

Hence the decision to start this year on the Commission's fifth coal-fueled station — the $220 million Lambton titan 14 miles south of Sarnia on the St. Clair River. Power is expected in 1968 from the first of its four units of 500,000 kilowatts each.

For operational economy, these will be the largest in Canada, towering over even Lakeview's 300,000-kilowatt units on Toronto's western outskirts.

Lakeview, with an installed capacity of 900,000 kilowatts, will add unit 4 this year and continue work on 5 and 6. By 1968 its total capacity of 2.4 million kilowatts will rank it among the world's biggest thermal stations.

*Coal for a long winter is stored at Lakeview where it is brought by boat. Tunnel is actually 230-ton stator core for one of station's 300,000-kilowatt units. Aerial view shows third stack taking shape at Lakeview. Ship is the Cape Breton Miner—built for Sydney to Toronto coal run. Structural steel is for unit 5 at Lakeview.*







new generating capacity was announced 1964 than in any year of Hydro's history. rojects will have a total capacity of )00 kilowatts — double the peak demands ropolitan Toronto.

decisions are responsible: first, to build n station, then to double its output to 00 kilowatts by 1971 to feed Ontario's growing electrical requirements.

racts were let for boilers and turbo- lors for its four units, whose output will hly equal to all of Ontario Hydro's Niagara .

ne $269 million Lakeview station, which d its first power in 1961, the third )-kilowatt unit was installed last year. Structural steel was 75 per cent completed for units 5 and 6 and preparations began for putting the boiler into unit 5 early this year.

Lakeview and the other coal-fired plants at Toronto and Windsor, were again put to the test as water levels on the Great Lakes dropped for the third straight year. While Canada and the United States sought solutions to the problem, Hydro's Niagara and St. Lawrence plants suffered an energy loss estimated at 4.3 billion kilowatt-hours during 1964.

Because they can pick up load and shut down quickly, the thermal-electric plants are particularly suitable for peaking purposes. Also, they can be located near the heaviest industrial locations. Technical progress has been such that they can produce almost three times as much power from a ton of coal as was possible 36 years ago.

By 1980, Ontario Hydro must increase its resources to 22 million kilowatts. Plants like these, and those which split the atom to produce steam, will account for about two-thirds of this total. □

# FOCUS ON WATER



While the spotlight will focus most brightly on thermal-electric projects during 1965, vital progress will be made on three hydro-electric stations which, together, will produce 414,600 kilowatts — more if economic factors dictate extensions.

The $22.1 million Harmon plant will go into service on the Mattagami River 55 miles north of Kapuskasing. The first unit is scheduled for June, the second in August. Capacity: 129,200 kilowatts, with room for two more units.

Three miles north, concrete work starts early this year on the draft tube and headworks for the $21.4 million, 125,400-kilowatt Kipling station. Two units are to be in service in 1966, again with provision for two more.

A control dam and channel will be completed in 1965 to help divert water from the Opasatika River to the Mattagami stations.

About 350 men will work on river diversion, cofferdams, excavation and concreting for the Mountain Chute station on the Madawaska, 22 miles southwest of Renfrew. By fall of 1967 it will have a capacity of 160,000 kilowatts. Cost: $27.7 million.

*Excavation is nearly complete at Kipling development, top photo, where concrete placing has begun. First of four 500,000-volt transformers has been shipped to Pinard T.S. — northern terminus of EHV line. One is shown, above left, being tested in Westinghouse plant. Photo, above right, shows rehabilitation work at Chippawa power canal. Aerial, right, is of Harmon project on Mattagami.*



ork continues on the new Harmon and generating stations, the 440-mile artery ario's major load centres is pushing south tal part of Hydro's $200 million James Bay hed development.

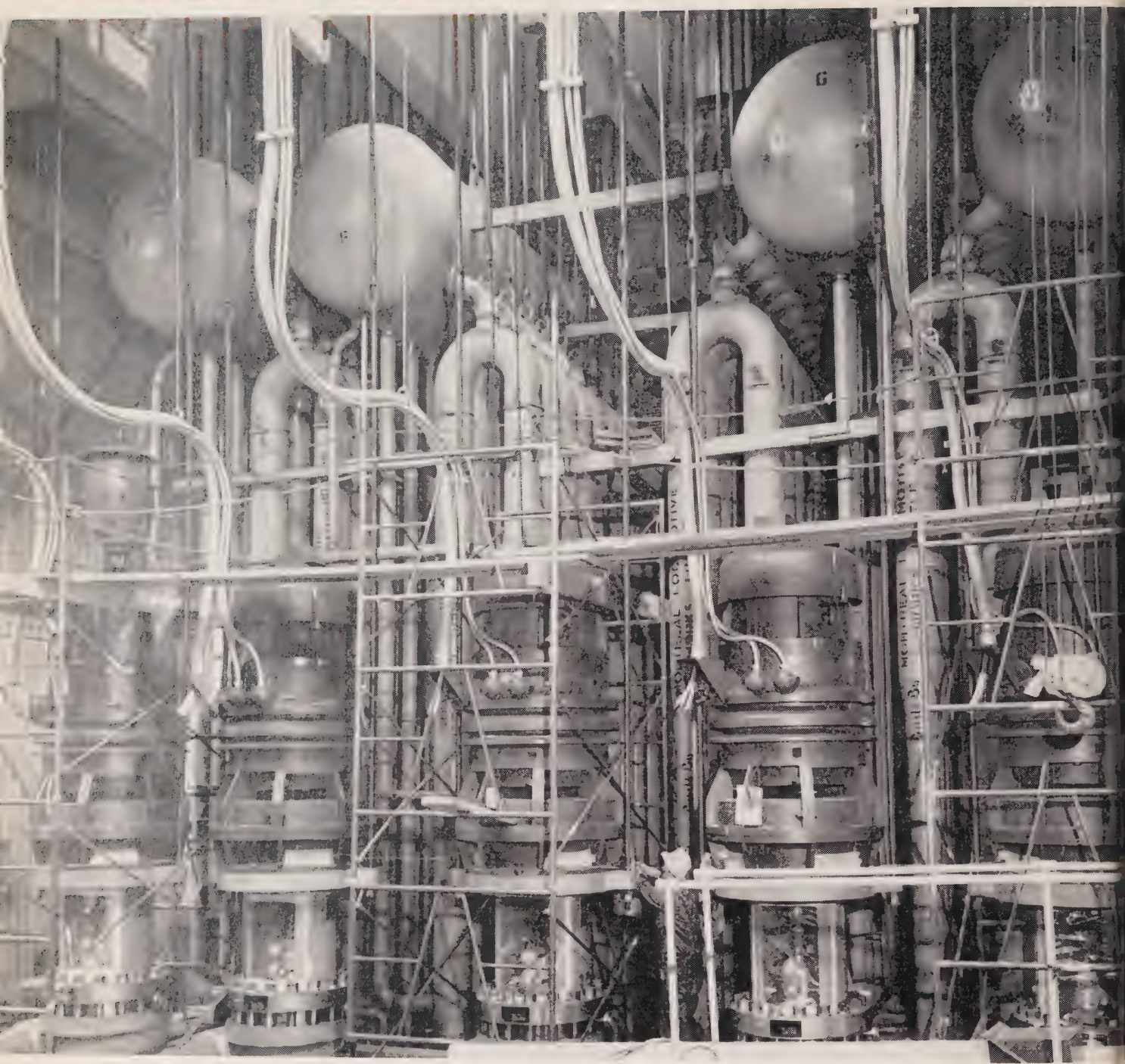
1966, the Extra-High-Voltage (EHV) line will it 550,000 kilowatts to Southern Ontario Harmon, Kipling and two existing stations, Long and Otter Rapids. It will operate at 0 volts instead of today's maximum 230,- r economy in long distance transmission. ough a shortage of steel towers interrupt- k temporarily late last year, the Y- and V- towers — some as tall as a 16-storey g — now extend 132 miles south of Sud- lour to a mile. Conductors and hardware have been strung for 127 of those miles, or 357 miles from the remote northern terminus.

Tower footings are ready 18 miles farther along the route. Essa transformer station, near Barrie, will be linked with Sudbury this year.

When the final stage carries EHV to Kleinburg, northeast of Toronto in 1966, Kipling generating station will be ready. Excavation for most of the plant's structures was finished last year and concrete placing has begun. At Harmon, the turbines are in and installation of generators is under way. At the third new hydro-electric station, Mountain Chute, a four-mile access road has been built and the power site partly cleared.

The Commission's transmission network was expanded by an estimated 208 circuit miles in 1964 to a total of 18,851 miles. Rural distribution lines now stretch about 49,000 miles.

For the first time in 43 years, the Chippawa power canal, at Niagara, was deepened and cleaned. The job will be finished this year. □



"We fully anticipate meeting the predictions made for 1975 of some 3.2 million killowatts from nuclear power stations."

Speaking in Sarnia, Robert J. Boyer, Ontario Hydro's 2nd vice-chairman, thus reaffirmed the Commission's confidence in the future of the atom as a source of electric power in the province. And it is apparent that 1965 will be one of the most significant years in this theatre of Hydro operations.

In Pickering Township, 20 miles east of Toronto, work will begin on the site of the largest nuclear power plant planned in North America. The first of two 540,000-kilowatt units — design provides for an extension of two more — is scheduled for service in 1970.

And at Douglas Point, between Kincardine and Port Elgin on Lake Huron, Canada's first full-scale nuclear station will be completed this year. By 1966 the $81.5 million plant will be producing full power of 200,000 kilowatts — enough to supply the combined needs of St. Catharines and Kitchener.

Hydro is confident such stations can produce large base-load blocks of power at a cost competitive with coal-burning plants.

*Look complicated?—it's all part of creating electricity from the atom at Douglas Point. Four of plant's eight steam generators are shown, above, with main pumps in foreground. Advanced control system is being wired, top right. Douglas Point will make first use in Canada of a computer in the control of a power plant. Pipes, lower right, will carry coolant to and from calandria.*





es splashed the news across Canada. ic circles around the world buzzed with . Ontario's Premier John Robarts saluted through comparable to "the discovery of new Niagaras."

event: announcement of plans for a giant ing station that propelled Canada to the t in nuclear power development.

the Atomic Energy Control Board ap- the Pickering Township site, close to big ntres to cut transmission costs, Hydro n W. Ross Strike called for work to start as possible.

plant is already being designed and soil has begun. A peak work force of 800 to n will be employed to put the first of two 540,000-kilowatt units in service by 1970.

Estimated to cost $266 million, the project will be financed co-operatively by Ontario Hydro and the provincial and federal governments.

Like its predecessors — Nuclear Power Demonstration (NPD) and Douglas Point stations — Pickering G.S. will burn natural uranium in its all-Canadian twin reactors, and use heavy water as a moderator and coolant.

Operating continuously for maximum efficiency, it is expected to produce power at less than four mills (two-fifths of a cent) per kilowatt-hour. Costs are greatly reduced by increasing the size and capacity of the plant, which explains the step-up from NPD's 20,000 kilowatts and Douglas Point's 200,000.

The NPD pilot plant near Rolphton on the Ottawa River has been generating electricity since 1962, while providing the operating and technical knowledge for full-scale stations. The first of these, Douglas Point, entered its final construction phase last year and all major equipment has been moved into the concrete reactor building. □



A long-range marketing plan designed to ensure continued low electrical rates through a fuller use of facilities has been developed by Ontario Hydro and the associated municipal utilities.

In a bid to obtain a full share of the future energy market for electricity, specific, long-term targets have been established. For example, objectives to be achieved by 1981 include: 700,000 new residential installations of electric water heaters; 1,000,000 new electric ranges; 1,500,000 new electric clothes dryers; 250,000 electrically heated homes and air-conditioning in some 80 per cent of all commercial establishments.

During 1965, Hydro and the utilities will be working towards the addition of 7,000 electrically heated homes, 100,000 water heater units, 60,000 kilowatts of commercial heating load, 15,000 kilowatts of commercial cooking load, 1,200 farm services upgraded to 200 amperes or more.

A province-wide promotion to boost the sale of electric clothes dryers will be conducted in the fall of 1965. Electric dish washers and window air conditioning units are other feature promotions scheduled.

An integrated province-wide "Hydro" advertising program will continue to support overall sales efforts. Using daily and weekly newspapers, radio, television, consumer and trade magazines, vehicle cards, outdoor display boards and direct mail, the advertising program is designed to provide depth and continuity of communication throughout the provincial market.

*George Gathercole, 1st vice-chairman, Ontario Hydro, rides a bulldozer at opening ceremonies of Forest Glenn Subdivision—first in Ontario to feature central electric heating. Sales management conference, top centre, is a continuing feature of development program. Lower group is examining home heating display at OMEA-AMEU convention. Unique promotion, far right, by Toronto Hydro, utilizes antique collection.*









the most important indications of the s of the integrated marketing program pe found in the market penetration sta- Of all single-family dwellings completed ario during 1964, for example, 12 per ere electrically heated. During 1965, some cent of new homes will be heated elec- In 1964, mass housing accounted for 12 t of all electrically heated homes and this age should also increase to 20 per cent 1965. An estimated 15-18 per cent of ally heated homes recorded in 1964 were ions from other types of heating systems. e field of commercial electric heating, the npressive growth has been in the motel Since 1958, electric heating has been installed in three out of every four new motel units built in Ontario. This has resulted in a total market saturation of over 26 per cent.

Hydro's marketing report card also includes these examples of success during 1964: 5,400 electrically heated homes, (for a total of 13,000); 105,000 electric water heaters installed — some 70,000 of which were by municipal Hydro customers; approximately 90,000 kilowatts of commercial electric heating, (for a total of 200,000 kilowatts since the load-building program began). To date, in Ontario, some 5,000 apartment suites, 420 motels, 225 churches, and 150 schools are electrically heated.

Some 12,000 kilowatts of commercial water heating and 15,000 kilowatts of commercial cooking load were also added during the year. On the farm front, approximately 3,100 services were upgraded to 100 amperes or better, and some 3,000 dusk-to-dawn outdoor lighting fixtures have been rented to Ontario Hydro customers since the program started in January, 1964.

Results of the third appliance saturation survey, conducted during the latter part of 1964, will be available from the Market Research Department early in 1965. For the first time, the department will be in a position to develop trend analyses of appliance ownership for all municipalities which have participated in the surveys. □

# FOCUS ON THE MUNICIPALITIES



Greater uniformity in marketing and administrative procedures is among the objectives being sought by the municipal Hydro systems of the province during 1965 and in the years beyond. In a year-end interview, John McMechan, president of the Ontario Municipal Electric Association, called for the adoption of standard approaches in fields such as rates, service charges and water heater marketing. He said that uniformity in procedures was an objective of the association as described in its constitution.

"Let us narrow our differences as much as possible," he urged, "so that by 1967, the Canadian Centennial year, we will have made considerable progress towards uniformity."

The OMEA president also predicted that more emphasis would be placed on public relations in the year ahead as the result of a recommendation by a committee of the Legislature that the functions of the public utilities commissions be transferred to the municipal councils.

"I am confident that the change recommended by the committee will never be enacted," he said, "and I think that the result of the recent plebiscite in Port Stanley reflects the attitude of most people."

The electors of Port Stanley voted overwhelmingly last November against the abolition of the local public utility commission. It had been proposed that their duties be assumed by council.

"At the same time," Mr. McMechan continued, "this matter has brought home to us the need for refurbishing our image. We must make sure that our duties and functions are understood by the public and that our achievements are kept before the people."

*Group around aerial basket attended open house by St. Catharines PUC on 50th Anniversary. Operators are shown in new control centre of Windsor Utilities Commission. Display window at Milton Hydro during 50-year celebrations. Impressive ceremonies marked opening of new Waterloo PUC headquarters. Cross-section of delegates at the 50th annual meeting of the OMEA-AMEU.*




rp competition from other sources of energy tinued during 1964 and the municipal Hydro tems, in conjunction with Ontario Hydro and er branches of the electrical industry, mounted strong, promotional offensive in an effort to ntain present low rates.

he growing use of electricity by the customers he 357 municipal Hydro systems in the province one indication of the effectiveness of their keting approach. Monthly consumption per res- tial customer is estimated at 510 kilowatt- rs for 1964—up from 498 in 1963 and 355 953.

t the technical and administrative level, the ties continued a program of development and rovement which has won the respect of electrical authorities throughout Canada and beyond. Working as a unit through the offices of the Association of Municipal Electrical Utilities, often in co-operation with Ontario Hydro, they dealt with such diverse matters as rates and accident prevention, finance and employee relations, load studies and accident prevention.

Speaking towards the end of the year, AMEU President James W. Hammond, of Hamilton, said there was "cause for pride" in the number of projects underway or completed. He called the association "the largest organization in the world devoting studies solely to the technical advancement and economics of electrical distribution."

The extent of the municipal Hydro operation in Ontario is indicated by the statistics. Serving an estimated 1,575,000 customers by the end of 1964, the municipal systems purchased 65 per cent of the primary energy sold by Ontario Hydro. Their combined power purchases for the year are estimated at 24,400,000,000 kilowatt-hours, which represents an increase over 1963 of 7.9 per cent. Total assets of the municipal Hydro systems are in the vicinity of $500,000,000. In addition, they have an equity in the Provincial Hydro system totaling some $350,000,000.

Two newcomers were welcomed into the Hydro family of municipalities in 1964—Nepean Township and the Village of Plantagenet—both in the Eastern Region. □



# MEN AND METERS

**"A well-run meter department is an asset of the highest value"**

Around the tables in the bright banquet hall, they sat in small groups — circles of six or seven men filling the room with the loud murmuring buzz of concentration. They bent forward to emphasize, leaned back to reflect. They explained, recalled, questioned. Their talk was punctuated with good-natured laughter.

It was the third annual Metermen's Workshop sponsored by the Association of Municipal Electrical Utilities. Held late last year, in Toronto, it was generally acclaimed as the best yet.

Bulk metering of apartment buildings was catching on and now there were experiences to swap . . . changing a restaurant's meter, which used to mean working at weird hours or annoying the customer, can now be done with no interruption in service and no loss of revenue . . . with some services over 200 amps, it's generally best to put the transformer inside and leave the meter outside.

Twice they met this way, and three times assembled for panel discussions to share summaries of their talks and ask questions.

James W. Hammond of Hamilton, AMEU president, predicted and assessed their enthusiasm in his keynote address, saying the workshop provided the best way to keep up with the best equipment and procedures.

"The meter department is indispensable to the successful operation of the electrical utility," he said; "a well-run meter department is an asset of the highest value."

Both for his skill and his contact with the public, the meterman is in the forefront of customer relations, Mr. Hammond said.

The record 227 delegates then broke up for discussions of service entrance equipment. After lunch they welcomed representatives of District 4, AMEU, under President C. C. Copland of Aurora. His group sat in on the assembly for panel discussions arising out of the group talks and a subsequent panel on kva metering. Panel moderators were Elliott McBroom of Toronto, chairman of the Workshop Planning Committee, and E. F. Burbank of Toronto Hydro.

Friday morning's buzz sessions involved metering equipment, and highlights from these were summarized by a panel headed by A. D. Macpherson of Toronto Hydro.

At the closing luncheon, F.L.G. Askwith of Ottawa Hydro discussed the AMEU's "Guide to Municipal Standard Construction." First issued in 1955, he said, the guide was no sooner in print than expansion and revision were undertaken. It had been sent on request to utilities across the U.S. and abroad.

Part 5, just issued, dealt with metering and service entrance equipment, the speaker continued. Like the rest of the guide, it "is not a standard but a compilation of recommended practices." Part 6, on street lighting, will be released in the summer of 1965.

Delegates present represented 81 utilities, reported D. T. Smith of Kingston, chairman of the AMEU Metering and Service Entrance Equipment Committee, sponsors of the workshop. Last year there were 77 utilities represented and there were 67 in 1962.

"Far from feeling the need of a rest," Mr. Smith said after the workshop, "I find the interest so high that I'm eager to get on with planning the next one." □

**nong the highlights of the third annual metermen's workshop was an illustrated commentary on the Soviet Union by eorge E. Gathercole, first vice-chairman of Ontario Hydro. Mr. Gathercole, who toured Russia with a group of Canadian businessmen st May, brought to his audience a picture not only of Russian cities, the countryside and the people who inhabit this vast and nigmatic land, but also some of the color and atmosphere of the May Day Parade.**



# COMMENT ON RUSSIA

onger is the tourist with his camera an t of suspicion or even of interest in ia. Except for defence installations, canal and certain strategic power and other opments, the photographer is unrestrain-

avelling some 4,000 miles, from Moscow eningrad in the north and to Voronezh, rozyhe and Volgograd in the south, our p, which included J. M. Hambley, the al manager of Ontario Hydro, was treat- ith courtesy and consideration. If, on sion, we were exposed to more solici- attention than seemed warranted, it was ably as much in our own interest as it a desire on their part to restrict us. Cer- y they made every effort to make our interesting and rewarding.

ucation, scientific research and an ad- ing technology in which electric power pies a position of the highest priority, mong those aspects of life in the Soviet n which immediately strike the visitor re-empting other considerations. At the same time, Russia is industrially well behind the West and gives no indication of catching up. Their production is hampered by a noticeable shortage of industrial capacity and equipment. While some factories are new and well organized, others are obsolete and so taxed for space that even inside laneways are used for storing materials and components.

In quality of workmanship, the Soviet Union, as in so many other respects, is a country of marked contrasts. In some areas — such as space craft, hydro-electric generation and transmission and in certain of the arts — their skills are unexcelled. The shoddy appearance of many of their new apartment buildings and the lack of adequate building maintenance stand in contrast. This suggests that their talents and skills, which in some instances are capable of meeting the most exacting requirements, do not run so deeply through the working population as they do in North America or indeed the Western world.

Our visits to hydro-electric power stations on the Volga and Dnieper Rivers and to the 200-megawatt, nuclear energy generating station under construction at Voronezh, were among the most interesting tour features.

Russia is a vast country possessing massive hydro-electric power potential, but most of the sites are many hundreds of miles from the main load centres. The State Committee for Power and Electrification has been majoring in two fields: the production of large hydraulic units, and the development of extra-high-voltage long-distance transmission.

Water turbines and generators of 500 megawatt capacity are now being manufactured in Leningrad from where they will be transported to the Baltic and up the Yenisei River, a voyage through the Arctic made possible by the crunching strength of the nuclear powered "Lenin" icebreaker.

The Russians estimate that they have up to 10 million kilowatts of undeveloped power on the Yenisei River and an additional 20 million kilowatts on the Lena River in northeastern Siberia. Before much of this potential can be realized, the problems of economical long-distance transmission beyond anything yet developed must be overcome.

The Russians have shown a degree of in-

**EORGE GATHERCOLE**

genuity and ability in solving complex engineering problems which command respect, not only in devising unique solutions to surmount hydraulic difficulties but also in the transmission of electric power. They are now transmitting electric power at 500,000 volts from Volgograd to Moscow, some 500 miles, and they have a direct-current transmission line operating from Volgograd to Donbas. Soviet engineers acknowledge that their work in direct-current transmission is still experimental and they advised that their Volgograd-Donbas line had not yet been stepped up beyond 300,000 volts, which is well short of their ultimate objective.*

The State power committee, which is the authority responsible for the supply of electric power in all Russia, has a capacity of about 90 million kilowatts, second only to the United States. On a per capita basis, however, consumption is only about two-fifths of that in Ontario.

The Russian people themselves are plainly though adequately attired, well fed and seemingly fully satisfied with their way of life. If their lack of material well-being in terms of housing, appliances and vehicles concerns them, they do not show it. They acknowledge their difficulties and deficiencies but take pride in what they have accomplished and do not doubt their ability to achieve a better life.

Because they have complete control over their means of production and their market, they can plan and build on a grand scale. They delight in making the biggest — the largest cargo-carrying plane, the biggest helicopter, the world's greatest all-year-round swimming pool, the finest sports stadium.

No doubt this helps to relieve the discomfort of queuing up for goods and the long wait for an apartment or a refrigerator — of which there are desperate shortages. Only the most affluent and influential can aspire to possess an automobile. Still, they have their compensations — the satisfaction that comes from rebuilding cities, the growing number of state stores, the increasing merchandise on display and visits to museums, operas and ballets.

A huge land with a growing population of 225 million, peopled by many races with strong motivations, Russia is a country which has already achieved a great deal and seems poised on the threshold of even greater developments. □

*Footnote:* A recent report in the New York Times indicates that this direct-current line has since gone into service at its designed capacity of 800,000 volts. The report calls this a pilot project for the development of a 1,500,000-volt system capable of transmitting cheap electric power from Siberian stations over distances of 1,500 miles or more.







*Photos on this page stress contrast in Russian scene. Right: May Day celebrations; top left, new Moscow air terminal; GUM department store.*







*Top row, left to right: a pause for refreshment in Moscow's GUM department store — said to be world's largest in terms of business. Girl meets soldier on Red Square. Section of giganic memorial being erected at Volgograd in memory of the fallen Russians of Second World War.*

PHOTO BY KRYN TACONIS



*Photo, left, shows J. M. Hambley with part of tour group inspecting turbine manufacturing plant at Leningrad. George E. Gathercole is in left foreground of photo, lower left, at Palace of Congresses theatre in Moscow. He is seated beside Mrs. Raissa Kuzzminskaia of the Committee for Co-ordination of Scientific Research. Long escalator, below, leads to the modern Leningrad subway.*





*National Electrical Week is being held this year from February 7 to 13. Timed to coincide with the birthday of Thomas A. Edison, the occasion brings our thoughts back to the early days of electricity and that's why we interview Edwin S. Lincoln.*



# IE KNEW THE IONEERS

S DOBSON

h is the theme of this year's National rical Week, and if you met Edwin S. oln you'd certainly list him as one of the gest 79-year-olds in the business.

e him stooped over a piece of antique rical apparatus, a magnifying glass in nand and a miniature flashlight in the , and you'd realize that electricity is is whole life.

uch of his time lately has been spent ifying and searching for items for On- Hydro's rapidly-growing historical col- on, and he has become a familiar figure e A. W. Manby Service Centre in To- where the collection is taking shape.

ne author of 15 to 20 technical books not sure of the exact number"), numer- rticles and a still unpublished biography, Lincoln knew and worked with most of arly electrical pioneers.

ost of his books were written in the even- and at weekends, although he devoted ull time to two bulky reference volumes, of which took two years to complete.

s few spare moments are presently oc- ed with another biography, this time on les Brush, the arc lighting specialist. Mr. oln, in fact, is one of the foremost au- ties on electrical history.

s first real introduction to electric power was way back in 1892 at his uncle's home in Brookline, Mass., which had electric lighting. It was love at first sight.

An avid young Lincoln read every scrap of available material and then put his self-gained knowledge to use installing domestic door bells, annunciators and electric ignition for gas lights.

The money he earned was invested in electric batteries and toy motors. Soon afterwards he plunged into the literary field, writing for magazines and technical publications.

His ambitions neared realization in 1906 when, after a short time teaching, he became a consulting engineer. From then on he was to work in practically every sphere of the electrical industry throughout the United States.

His work continually brought him into contact with the industry's pioneers . . . Nikola Tesla, Edward Weston, Elihu Thomson and Frank Sprague.

Sprague was responsible for one of the first successful electric trolley car systems.

Mr. Lincoln met Edison, but their paths did not often cross. "He was in DC and I was an AC man."

But perhaps his greatest admiration was for Charles Steinmetz, widely acknowledged as a mathematical and electrical genius. Steinmetz was responsible for a number of important electrical theories, and his discovery of the law of hysteresis made it possible to forecast losses of electric power due to magnetism before the construction of motors, generators and other pieces of electrical equipment was commenced.

Steinmetz emigrated from Germany to the United States in 1889 to become a consulting engineer and later Professor of Electrical Engineering at Union College, New York. He died in 1923.

Mr. Lincoln says: "He was a phenomenal man and probably the greatest of all electrical geniuses. He was equally active in chemical work and other sciences, yet was easy to work with and never tried to overpower you with his knowledge."

Steinmetz, he adds, foresaw electricity's great potential.

"I once asked him 'Doc' — I always called him Doc — 'just how much more can we hope to progress? Steinmetz replied 'We are standing on just one small corner of a foundation. There is no limit to the possibilities of electricity.' "

As Mr. Lincoln grew older, he turned more towards the historical aspects of the industry.

"I got to the point where I realized that competition with young engineers, with their better training, was becoming difficult. I had seen this happen to other men, too.

"But I could not leave electricity . . . the moment I retire I will be in trouble."

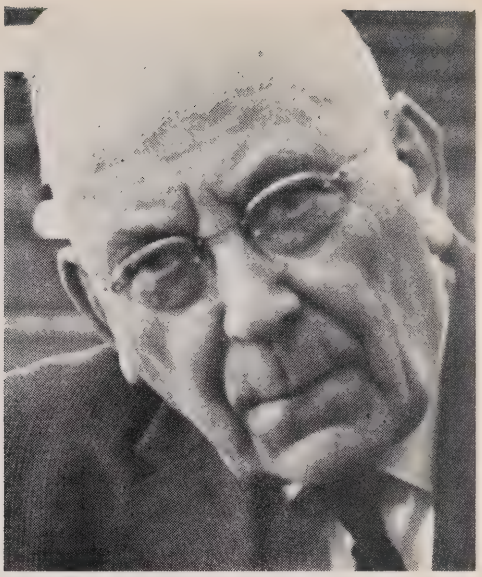
Mr. Lincoln has acted as adviser and obtained equipment of historical value for the Smithsonian Institute in Washington, D.C., and for the Electrical Historical Foundation, of which he is curator in his home town of Brattleboro, Vt.

The foundation has donated many pieces of equipment to Ontario Hydro's collection, including those early toy motors young Lincoln bought with this hard-earned pocket money.

Mr. Lincoln's enthusiasm for the Hydro collection is boundless. "It could easily become the biggest of its kind in the world and will be of immense educational value," he says. Of Hydro in Ontario, he has this to say: "I think you have a system which is a credit to the nation and to the whole world. I do not think you have to play second fiddle to anyone."

At one time his relaxation was mountain climbing, but a leg injury ended that.

"Now my only climbing is among the generators. It's true that electricity has been my whole life, but take away electricity and you take away our whole civilization." □



*Edwin S. Lincoln*

*over an old motor in the Hydro collection ectrical antiques, Mr. Lincoln helps out e big job of identification. Curator of ctrical museum in Vermont, he knew and ed with many of the electrical pioneers.*



**A quarter of a million older homes in Ontario have been earmarked as likely candidates for electric heating.**

Few success stories have excelled tha electric home heating since its modest d in Ontario about five years ago. And gress has closely followed predictions o Electric Heating Association of Ontari the guiding organization set up at the o of the industry to ensure customer sati tion through orderly development and qu installations.

As the industry matures the promoti spotlight is widening to encompass a segr of the market previously allotted little i way of sales stimulus — the conversio older homes. If future targets are to be 15 to 20 per cent of electrically heated hc connected in 1965 will be conversions the percentage will rise to 30 in 1967.

Fortunately, the potential is there and even more impressive than for the new h market. Some 250,000 10-year-old hom the province are considered prime prosp for conversion. On the other hand, the of new homes to be built in Ontario du 1965 is predicted to be 30,000, of w some 20 per cent will be electrically heat

With relatively little promotion, an pressive 15 to 17 per cent of the electri heated homes recorded during 1964 nevertheless, been chalked up in the con sion market. This represents a steady gr from the 3.6 per cent represented by version in 1960.

Initial thinking about the conversio existing homes to electric heating seeme follow one of two courses: either the ave home was considered to be too loosely structed, too poorly insulated, or too l for conversion; or anything from a tree h to a horse stable was thought to be suit for electric heating.

Past experience points to a respons middle-of-the-road policy wherein house is considered on its own merits. It found that customers were willing to pa to 15 per cent higher operating costs, c pared with previous heating and maintena costs, for the intangibles such as cleanli and convenience which go along with e tric heating. And while older homes usu required some re-insulation, installatio an electric heating system required fe

*War-time houses are particularly adaptabl electric heating and Ajax Hydro is maki strong bid for this part of the conversion ma Photo shows extra insulation being ad*

# ELECTRIC HEATING FOR OLDER HOMES

by JOAN ALLEN

ural changes than conversion to any system.

e experience of the Guelph Board of and Heat, in its initial forays into the rsion market, has borne out these ob- ions. Approximately one-third of the cally heated homes in Guelph are older , although the utility has confined its in the conversion field to answering sts for information.

ectric heating doesn't have to be com- e in cost if the customer is actively sfied with his present system," Gene p, sales superintendent of the Guelph , says. "We've had several examples of

en if the estimated operating costs high to the utility, they may seem low customer. We've found it better to pre- he estimate to the customer without ent, and let him make up his own " Mr. Dunlop says. "But the electric g must be an improvement over the ner's existing system, and actual oper- costs must not run higher than esti- ."

eed, one of the most important factors veloping the conversion market seems in providing customers with a realistic ting-cost estimate. Heat loss calcula- are worked out by the "shell" method, than the room-by-room procedure for new homes. By this method the is considered as a box, and heat losses lculated for the total outside-wall area, the heat losses for window and door taken into consideration as well.

meowners wishing to convert their to electric heating now have several ative methods from which to choose. new developments in the use of elec- in warm-air and hot-water heating ns, a complete product-line is now on arket.

e forced-air central electric furnace has d immediate acceptance for easy con- n of older heating systems. Basically a containing resistance electric heating nts, it does offer a number of bene- t is not likely to work well, however, faulty ductwork, which may be a good f the problem with the existing system. e other hand, an electric furnace may answer even with faulty ductwork, if oard heaters can be installed in hard-to-heat areas. Straight replacement of a fuel-fired furnace with an electric furnace should cost between $350 and $400 installed, excluding service entrance equipment.

Installation and equipment costs for a complete baseboard electric heating system might run a little higher.

For customers who want summer cooling as well as winter heat, a heat pump may be the answer. Competitive in operational and initial costs with conventional heating and air-conditioning systems, the heat pump, when used for heating alone, costs substantially more than other types of electric heating.

Electro-hydronic packages for easy conversion of existing hot water heating systems are available for between $300 and $400 installed, plus service entrance changes if required. Units vary from the size of a small water-heater to the size and shape of a large attache-case. Cost of replacing a hot-water system with a baseboard electric heating system would be substantially higher because the old furnace and pipes would have to be removed.

Although the conversion market for electric heating is just opening up, a number of utilities have undertaken conversion programs in their own municipalities.

Ajax Hydro, for example, has extended its existing financing plan to include the conversion of homes to electric heating. The municipality has a large number of war-time houses which are particularly adaptable to electric heating. Electrical and insulation contractors quote directly to Ajax Hydro, which acts as prime contractor for its customers.

Jack Sanders, manager of Ajax Hydro, says that every customer who enquires about electric heating, even though he does not immediately convert his home, gains a better understanding of the subject and of the aims of his local Hydro.

"Frequently, a customer who said 'I'll let you know' a year ago, is taking positive action now," Mr. Sanders says.

Other utilities, such as Welland Hydro, are investigating the possibilities of a concentrated drive to convert homes to electric heating. Two houses built during World War II in Welland have already been converted to electric heating, and the annual heating bills are proving satisfactory.

Ontario Hydro has been studying the conversion market for several years, and a specific, province-wide conversion program is planned for mid-1965.

Peter Parker, of Hydro's sales staff, has concentrated on the conversion market and he has examined many installations both in Canada and the United States.

"The most important factor in developing a conversion program," Mr. Parker says, "is ensuring that customers will obtain the same kind of satisfaction that they have been provided with in the new home market."

A market which has been merely simmering up to the present, the conversion of older homes to electric heating, should come to a full boil in the very near future. □

## QUALITY CONTROL FOR CONVERSIONS

The award of a Conversion Seal to homes converted to electric heating has been approved in principle by the directors of the Electric Heating Association of Ontario.

To be implemented early in 1965, the seal will assure customers of satisfaction with the workmanship and design of their electric heating equipment and installation. □

# ALONG HYDRO LINES

## I. K. Sitzer retires



I. K. Sitzer, deputy general manager of Ontario Hydro, retired December 31, 1964. In paying tribute to Mr. Sitzer, General Manager J. M. Hambley said "the loss of his wisdom, integrity and vast fund of knowledge and experience acquired during 38 years of dedicated service will be felt through the entire organization."

Mr. Sitzer was particularly well known at the municipal utility level having served with the Milton and Ridgeway systems early in his career. His various duties with Ontario Hydro also kept him in close touch with the municipalities. He was a district engineer with the former Municipal Department of the Commission prior to his appointment as industrial service engineer in the Consumer Service Division, in 1947. He became director of this division in 1953.

Mr. Sitzer was appointed assistant general manager of Production and Sales in 1959. In 1961 the name of this branch was changed to Production and Marketing. He became deputy general manager of Ontario Hydro, April 1, 1964.

Indicative of the esteem in which he is held among Hydro circles in the province, a citation was made last year welcoming the deputy general manager to the exclusive Honorary Membership club of the Association of Municipal Electrical Utilities "for his outstanding contribution to the progress and development of Hydro in Ontario."

Coincident with Mr. Sitzer's retirement, Harold A. Smith, assistant general manager, Engineering, is appointed chief engineer. In his new position, he will be responsible to the general manager for the work performed by the Operations Division in addition to that of the four divisions which formerly reported to him. These are System Planning, Engineering, Construction and Research. In recent years these fields have become increasingly interdependent. (more details in February) □

## Port Hope retirements

It was ladies' night at Port Hope recently when nearly 50 members of the Hydro-Electric Commission honored three retiring female employees for their combined contribution of 94 years service.

A special tribute was paid to Lulu Beatty, advisory office manager, who is retiring after 46 years service with the Port Hope commission. The other honored were Mary "Molly" Curran of the billing department, with 30 years service, and Georgina Noble, cashier, with 18 years service.



*Admiring Lulu Beatty's letter of appreciation at Port Hope Hydro dinner are, left to right: Georgina Noble, Miss Beatty and Mary Curran. Looking on are W. H. Walker, commissioner, D. A. Currie, chairman and Ontario Hydro Chairman W. Ross Strike.*

A letter of appreciation was presented to Miss Beatty by James Hammo president of the Association of Municipal Electrical Utilities, at a testimon banquet held at the Idalia Golf and Country Club. "The example you h set for career women in our industry has been appreciated," said Mr. Ha mond. "For many years you have attended all our conventions and I am s you gave the Port Hope Hydro the full benefit of these meetings."

Ontario Hydro Chairman W. Ross Strike told the audience that "M Beatty has the longest service record of any lady in the Hydro organ tion and there are not many men who excell the 45 year service mark." noted that Hydro in Ontario seemed to have more esprit d'corp than other industry "as banquets like these reflected."

Presentations were made to the retiring employees by both the staff commission. Among the guests were Port Hope Mayor J. R. Carr; A. Pedersen, manager, Eastern Region; and D. F. Lamb, supervising munic accountant.

In a brief address, Miss Beatty recalled the financial arrangements m in 1919 when she joined the utility, which was then operated by Ont Hydro.

"My salary was $65 a month and I was told that the Commission would g me $100 toward my funeral expenses. There were six on staff then an was quite common to see one of the boys riding his bicycle to a work with coils of wire and cross arms on the handle bars."

## New Turtle Club members



Latest Hydro members of the exclusive Turtle Club — a fellowship of sons who have been saved from death or serious injury by hard hats — from Scarborough and Toronto Township.

At a regular safety meeting, Ron Harrison, manager of the Scarboro Township PUC, presented a Turtle Club membership to lineman Ken Malo whose hard hat saved him from serious injury when he was struck on head by a falling cable grip. In the photograph, he is flanked by Mr. Harri right, and M. O. Shepherd, safety supervisor of the Electrical Utilities Sa Association.

The Toronto Township Hydro award, presented by B. D. Fleming, mana went to lineman Owen Grey. This utility has just completed a full year wit a compensable accident.

# MUNICIPAL BRIEFS

**Gloucester Township** voted 3,105 to 706 to establish its own Hydro c mission in a recent poll. Also, the request for permission to buy distribution system from Ontario Hydro was approved 2,253 to 524 by voters. Powassan voters rejected the proposed purchase of the electr facilities from Ontario Hydro and will continue as customers served dire by the Commission.

**The Electrical Bureau of Canada** is suggesting that gold-plated keys awarded to promote Gold Medallion all-electric homes. First member t so was the Scarborough PUC, which presented a set of keys to the 10,0 family in Ontario to choose an all-electric home. The keys can be ord at a cost of $2.50 a pair.

**Among the many towns** and cities in Ontario sponsoring Christmas ligh contests were: Kirkland Lake, Fort William, Peterborough, Cardinal, Hesp

n, Coniston, Sarnia, Capreol, Copper Cliff, Point Edward, Falconbridge, Sudbury and North Bay.

**va plans** to construct a new PUC building and make alterations to n hall, at a cost of $44,500, under the Winter Works Program.

**direct mail tabloid** will be issued ten times a year, starting this under the title, "The Pace Setter". While the publication will be by the Advertising Department of Ontario Hydro, it is hoped that ersonnel in regions, areas and utilities will contribute information. lience will be home builders, general building contractors, architects, ng engineers and utility managers.

**novelling** will be a thing of the past when Leamington senior citizens nto their new unit. Electric heating cable is to be installed in the alks and will be controlled from the inside by pressing a button.

**sor drive-in theatre** is featuring 400 electric heaters for their ers' year-round viewing comfort. The portable units can be placed re in the car and are thermostatically controlled. The heater auto- y shuts off when the temperature reaches 72 degrees.

**er** is the latest municipality to try out illuminated street signs. Two een erected on a trial basis and the public has been invited to it.

**ra MacIntosh,** a clerk with the Owen Sound PUC for nearly 30 years, cently.

**rry appears** to be developing into a residential centre of all-electric Until last year, there were just four all-electrically heated homes in age. But in 1964, a total of eleven electrically heated dwellings ilt or were under construction, and four older homes were converted ric heating. There are also seven apartments, five stores and a motel Perry that are heated electrically.

**Hydro Commissioner** Lt. Col. A. A. Kennedy is commencing his 19th a member of the Owen Sound PUC, having been returned this year mation, along with Norman Robertson, who has held his post since

**dustrial power** rates have been reduced to $36 per horse power in t, Dryden, Fort Frances, Geraldton, Kenora and Terrace Bay Rural g Areas.

**ve** has retired from the Ingersoll Public Utilities Commission after s as a commissioner.

**o PUC** has decided to boost its minimum electric power rates for c and commercial users from 75 cents to $2.50 a month, starting ar. The utility estimates the break-even point for supplying and g one customer is $2.57 a month. The previous minimum 75 cent covered the use of only 30 kilowatt-hours and the new minimum will kilowatt hours.

**abcock,** 48, line superintendent of Chatham Hydro, died recently. nting on his death, R. S. Reynolds, manager, said, "We certainly lost erful man. He really knew the business and had the confidence of and his own staff." Mr. Babcock had been with Chatham Hydro s.

**n Hydro** plans to purchase property for a future office and service .

**Glen** subdivision in Toronto Township is featuring central electric with forced air.

**on PUC** intends to offer a preferred rate for metered water heaters it up-grading of existing water heater installations and to help the on of fast recover water heaters in new homes.

**d PUC** is planning to buy a lot and building which adjoins the sion's administration building property for future expansion. □

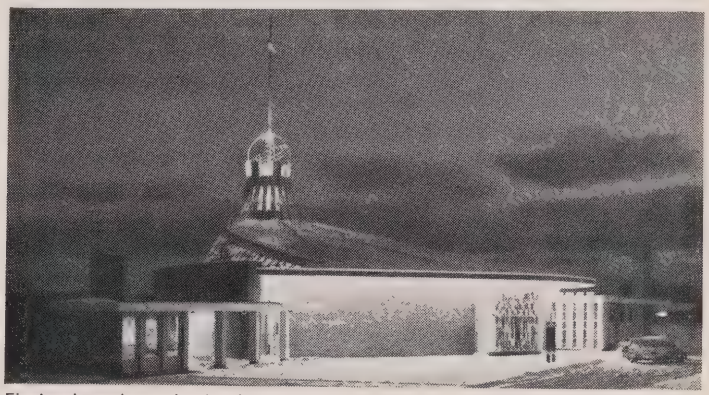
## PUC office for Delhi

to vacate their offices in the town hall, the Delhi PUC has started con- n of a $53,000 office building at Church and Queen Streets. The new building, which will provide 2,900 square feet of office space, is planned for completion early in the new year.



The single floor plan is designed to meet all demands for space in the foreseeable future and will feature an electric heat pump capable of heating and air-conditioning the building on a year-round basis. □

## Lighting competition winner



First prize winner in the 1964 applied lighting competition conducted by the Hamilton Chapter of the Illuminating Engineering Society was the modernistic St. George's Roman Catholic Church at Crystal Beach. Lights installed below the church's windows, which separate walls and roof, create a floating roof effect at night, while the floodlighting of the aluminum cross mounted above the Byzantine-type dome is designed to make the cross a visible symbol at all times. □

## Senior Hydro appointments



*A. B. Hayman*



*O. S. Russell*

Ontario Hydro has announced the appointment of Omer S. Russell as executive manager of the seven regions in the province, and A. B. Hayman as manager of the Northeastern Region.

Mr. Russell, formerly director of the Management Services Division, was born in Delta, Ontario and joined Ontario Hydro in 1930 following his graduation from Queens University. He was manager of Hydro's West Central (now Niagara) Region, with headquarters at Hamilton, for more than four years. Mr. Russell succeeds W. H. (Bill) Edwards, another former West Central Regional manager, who died November 10.

Mr. Hayman was consumer service and sales engineer of the Northeastern Region until his appointment. Born in Truro Nova Scotia, he joined Hydro in 1930 on graduating from Dalhousie University. Associated with the Northeastern Region since its formation in 1948, Mr. Hayman succeeds the late H. R. D. (Rolly) Graham. □

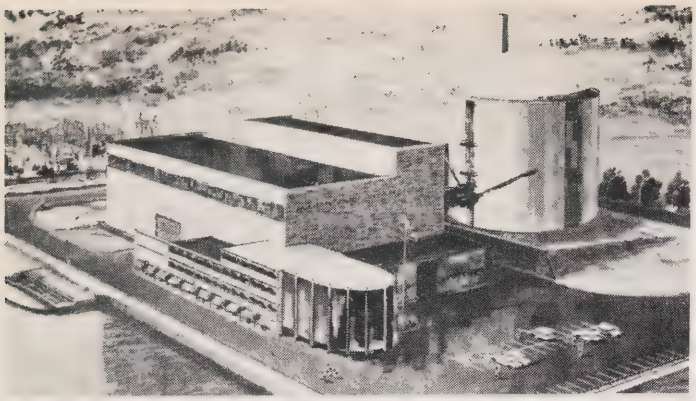
## Atomic power designers move

Atomic Energy of Canada Limited is to build design offices and a development laboratory in the Sheridan Park Ontario Research Community, 17 miles west of Toronto.

The new establishment will house AECL's Power Projects group of about 400 engineers and technicians. Power Projects, which carries out engineering and development of nuclear power stations, is now located in temporary buildings in Ontario Hydro's A. W. Manby Service Centre in Toronto.

Since it was formed in 1958, Power Projects has been engaged in the design and management of the Douglas Point Nuclear Power Station, Canada's first full-scale nuclear power plant. A similar 200,000 kilowatt station is being built in the State of Rajasthan by the Indian Department of Atomic Energy, with Power Projects acting as the nuclear consulting engineer. In addition, Power Projects is designing the nuclear steam generating equipment for the first two 540,000 kilowatt units in Ontario Hydro's nuclear station which will be built in Pickering Township near Toronto.

The new location for Power Projects will be a 17-acre site in the Sheridan Park Ontario Research Community, a 340-acre area in Toronto Township reserved for research establishments. The Community already contains a num-



*Artist's conception of Rajasthan atomic power project*

ber of research laboratories built by major Canadian companies.

The move will be made toward the end of 1965. The new establishment will consist of a two-storey engineering building containing 73,000 square feet of space, and a separate 75,000-square-foot laboratory.

The laboratory will be used for development and testing of components for nuclear power stations. The main equipment to be installed includes two high pressure, hot water loops and a high pressure steam loop. H. G. Acres and Company has been appointed consultant for the design of this equipment which will represent an important addition to the engineering research facilities of Canada. □

## Electric service league appointments

The Electric Service League of Ontario has announced the following changes in field staff:

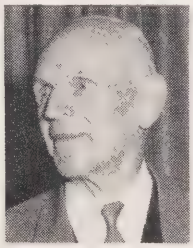
Alex S. Kemp, formerly of London, has been appointed staff supervisor with headquarters in Toronto. Lou M. Staples, formerly responsible for the Scarborough to Belleville territory, will be located in London.

Graham Northam, formerly of Ajax Hydro-Electric Commission, will take over the territory vacated by Mr. Staples. G. A. Wilson of Port Arthur will represent the League in Northwestern Ontario with headquarters in Port Arthur. □

## Listowel manager retires



*R. W. Moogk*



*R. B. Hanna*

The dean of the Listowel Public Utilities Commission, Manager R. B. Hanna, has retired after 43 years service with this Western Ontario utility. At the commission's request, Mr. Hanna will remain in a consulting capacity until April. A native of Listowel, Mr. Hanna became interested in electricity prior to World War I. After returning home from war service, he worked on the Cameron Falls Hydro development on the Nipigon River. In 1921 be became superintendent of the Listowel Water and Light Commission, which later became the Public Utilities Commission. He was named manager in 1953.

Chairman John McMichael, in an interview with the Listowel Banner, said: "The commission and the town owes much to Mr. Hanna for what he had done over the years."

Succeeding Mr. Hanna, is R. W. Moogk, formerly superintendent of the Niagara Falls Public Utilities Commission. Mr. Moogk began his utility career with Stamford PUC, and when the township merged with Niagara Falls, he was appointed superintendent of the combined utility. □

# PRESS COMMENT

*A recent editorial which appeared in the Bracebridge Herald-Gazette under the heading "Local Commissions are Favored", discusses a subject of vital importance to the future of the publicly-owned Hydro system in Ontario. The editorial, in part, says this:*

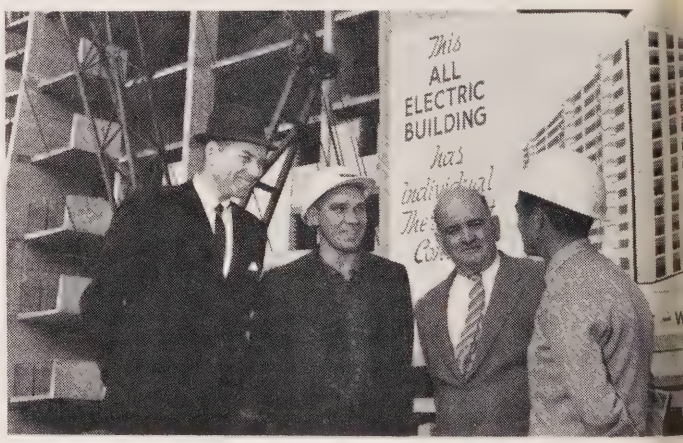
"In this year's municipal elections in the Village of Port Stanley, down in Elgin County, a vote was taken on the subject of abolishing the local public utilities commission and having the work of the electrical department and water supply made the responsibility of the village council. The ratepayers of that municipality turned down the proposition by six to one. In another Southern Ontario village, the Council decided to take action to abolish the town's commission and in the by-law providing for annual election arrangements no provision was made for the election of commissioners. So strongly did the people of the town feel about the matter, evidently, that the Council reversed its decision, and the commission was saved.

"These incidents are of some interest to those who have noted a proposition put forward by members of the Ontario Legislature, a committee of all parties, and particularly supported by representatives of the Official Opposition, that the Public Utilities Act should be rescinded and the work of local municipal commissions made the responsibility of the council. There is ample evidence that the proposition does not appeal to the Robarts Government. Certainly it appeals to very few councillors across the Province, nor to commissioners. It is sufficient to say, probably, that operation of utilities is a business matter in which tax money is not involved, and it is a good principle to separate business operations from government.

"Another consideration which may have escaped the attention of those who say municipal councils could handle the work of commissioners is that in very many cases the 350 or more commissions in Ontario have been established with the consent of the electors. It would appear to be an arbitrary act for the Province to set aside such local voted approvals and it is improbable that such action will be taken.

. . . "One prominent commissioner said not long ago that if commissioners keep themselves up to date and make certain that their accomplishments are properly recognized the question of a change is not likely to arise." □

## Individual water heaters




An all-electric apartment building, the 13-storey Peel Towers, present under construction, will be the tallest building in Toronto Township. The 136-suite building, to be completed in February, 1965, will be heated electrically by baseboard convector heaters in the rooms. Each suite will be furnished with electric appliances, along with individual 30-gallon fast recovery electric water heaters.

Its many luxury features include a heated outdoor swimming pool. Electric energy cost will be included in the rent.

Standing in front of Peel Towers are B. D. Fleming, left, manager, Toronto Township Hydro, Elmer Wright, second from right, commission chairman, and the builders.

## November energy production

Primary energy provided by Ontario Hydro in November, 1964, totalled 3.53 billion kilowatt-hours, an increase of 7.3 per cent over the same month a year ago.

For the first 11 months of 1964, the total is 36.81 billion kilowatt-hours, up 8.0 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand in November was 3.44 billion kilowatt-hours, 1.2 per cent less than the previous month.

The seasonally adjusted total for November represents 41.29 billion kilowatt-hours at annual rates. This is 296.9 per cent of the energy demand in 1949. □

# OFF THE WIRES

Three Soviet engineers have been granted a S. patent for an electronic sleep machine said be in hospital and clinical use in Russia. In trial, a Washington patent attorney put his rtner to sleep on the office floor in four inutes.

Now, if they could come up with a gadget aranteed to keep the office staff awake all y, they'd really have an electrical load builder.

On the subject of electronic developments, mes word of a device called a translator, put t by a Canadian firm, "which allows dissimilar ectronic computers to communicate."

This obviously fills a need of some conse- ience. We have always felt uneasy in a room ll of computers which have little in common d nothing to say to each other. It's not so bad ring the hustle and bustle of the business day t imagine how awkward the silence must get night and during weekends. Now, with office rties and other scandal to discuss, they should ve a ball.

It's going to be a cold, nasty winter according Printer's Ink, which draws attention to a secret t-and-squirrel poll taken by Baer's Almanac in ncaster, Pennsylvania. The extensive tree-to- ee poll was based on the theory that the eper squirrels bury nuts in the fall, the harsher e winter. Among the results gleaned from the rvey: nuts were found to be far more plentiful an usual — up five to 37 per cent depending on locality — and the squirrel census was at all-time high with aggressive, bring-home-the- t types predominating.

Not very reassuring, especially to the good lk of Pennsylvania, who probably didn't realize w many nuts there were in Lancaster.

And in the nutty department, there is this em from Safety News — Eastern Region.

"A sales representative was visiting a custom- and before entering the basement he asked e lady if her dog would bite. The lady assured m that it wouldn't, but in no time at all she as proven wrong. Our man was bitten on the ght calf. The owner admitted that the dog ecently had pups and this may have made him oss."

We suspect most self-respecting males would e a trifle upset after giving birth.

The following letter to Kenneth Sitzer, Hydro's ecently retired deputy general manager, from owe Lawler seems to refute the claim of our ortheastern correspondent by 30 years. Mr. awler was manager of Ontario Hydro's Toronto Central) Region and the Mr. Montgomery he efers to was superintendent of the local Hydro ystem and telephone company for many years.

ear Ken:

The Hydro News in its new format is of great terest and is read from cover to cover.

On page twenty-five of November issue appears he statement — "Northern Ontario claims the rst electrically heated baptismal tank in anada."

This brought pleasant memories of a favourite friend of mine, and yours, Mr. Wm. (Billy) Montgomery of Thamesville.

You may recall that we were often requested by Hydro superintendents to make actual, on the spot inspections to confirm the latest record of connected loads. Especially was this the rule where one might suspect a complaint when an increase had been discovered.

On such an occasion in Thamesville I remarked that the connected load of the Baptist Church appeared to be large. Billy promptly escorted me to the church and down into the basement. In a partitioned enclosure beneath the baptismal tank he shone his flashlight up to the bottom of the tank and displayed the terminal box of an immersion heater which projected into the water of the tank. If my memory is correct it was a 5,000 watt heater.

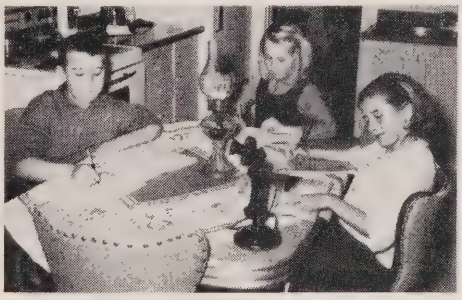
It is unlikely that the incident would have remained in my memory had we not noticed a pair of long waterproof waders hanging from a hook on the wall. Then Billy made one of his inimitable expressions which was intended to give the impression that number one man did not take any chances.

Consequently, Thamesville appears to hold the record by about thirty years.

With kind regards.

Yours sincerely,
(signed) Rowe Lawler.

■ Like the rest of us, as children, Moe Sheppherd, field safety supervisor with the Electrical Utility Safety Association, had to walk thirty miles to school and back, negotiate snow 15 feet deep, cut four cords of wood before break-



fast and study until 4 a.m. by the light of a lamp. And like the rest of us, his children don't believe him. But Moe is not a man to take defeat lightly. As the photo suggests, he dug out an old kerosene lamp and let the offspring suffer through a session of homework by its flickering flame. The ancient telephone helped put the lesson across.

Some of the incredible (to we old fuddies) questions posed by the youngsters: would the oil last 10 years? what if you had to go to another room?, and how do you turn it off?

Come to think of it, we do take a lot of things for granted and a session with the oil lamp might do us all good.

■ Far be it from us to suggest that the electrical manufacturers are lacking in ingenuity but there may be one segment of the population which is being overlooked. We refer to the dogs and cats of the province.

It only requires a stroll through a supermarket to appreciate the importance attached to this market by the food industry. The hearty bill of fare offered to our four-legged friends adds up to a multi-million dollar business.

There is one indication that the electrical industry is beginning to sit up and take notice. Electric dog dryers, according to Printer's Ink, are multiplying almost as fast as hair dryers.

But surely this is just a beginning. With the increasing variety of pet food available, it is not too far fetched to envision Fido with his own food freezer and electric can opener. Heating units for dog kennels are naturals and few kittens would disdain an electric blanket of their own. Other areas worth investigating include electric mouse traps, hair clippers, milk bottle warmers, boudoir lamps, and, as the animal diet grows more bland and sophisticated — electric tooth brushes.

As Printer's Ink points out, there are 79 million cats in the United States. The dog population is estimated at 27 million and it is said to be growing by, of all things — leaps and bounds. If the monthly per cat and dog consumption of kilowatt-hours could be brought up to, say, 50, we would all have something to bark about.

■ As a sequel to our story on River Valley curling stones (October Hydro News) we hear that this young Northern Ontario company intends to add children's stones to its product line. They will weigh 25 pounds and have the same running surface as adult stones.

All very well but we thought the most important part of curling took place before and after each game! Perhaps they could provide milk jugs with each of the new bantam-weight stones.

■ A recent move by the Yorkshire Electricity Board seems to disclaim the impression held by some that the English are a rather staid lot. The board intends to issue saving stamps which can be used to help pay the electrical bill or to buy appliances.

■ A British Columbia coach company is sponsoring 2,000 mile luxury tours (with cocktails) from Victoria to the site of the giant Portage Mountain hydro-electric project on the Peace River. So successful was the first tour that two more were scheduled.

And the indications are that they didn't go along just for the cocktails. One man intends to take the same trip again next year just to watch construction progress. Another called it "the best dam tour I ever had."

■ We are intrigued by the findings of the American scientist who reported that small-bosomed women have the highest intelligence quotients. While this will bring comfort to the many thousands who need it most, it does pose a problem for the executive. If he picks a curvaceous stenographer he obviously isn't looking for brains. □

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Let's celebrate electric heating's arrival here in the sunroom!




**Got a chilly sunroom?** Adding a new room? You can make any room warm and livable with electric heating. It's simple and inexpensive to install and operate. You can add electric heating without disturbing your present heating system. And it will cost you less to install than it would to extend your present system. Flameless electric heating is the quietest, safest, cleanest heating system ever devised.

**Electric Heating Information Centre.** The specialist at your Hydro's Electric Heating Information Centre can give you complete information on the type of unit best suited to your room, installed cost, operating costs and help in arranging installation. Call now.

**ELECTRIC HEATING INFORMATION CENTRE**

***your hydro***

*This advertisement is one of a series being made available by Ontario Hydro to the municipal electrical utilities, without charge, for use in conjunction with the supplementary electric heating campaign being conducted from October 16, 1964 to March 2, 1965.*

NTARIO HYDRO NEWS FEBRUARY, 1965



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vshoes are still indispensable in the North. See "Webs over the Wilderness" on page nine.

FEBRUARY, 1965

# ONTARIO HYDRO NEWS

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**THE COVER**

Snowshoe trails through the soft snow symbolize a method of travel which was old when the White Man came to America and still plays a role in Northern development. For more details, see "Webs Over the Wilderness" commencing on page nine. Taken at Lake Panache in the Sudbury district, the front cover photograph was supplied by the Ontario Department of Lands & Forests.

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# INSTANT AIRLINE RESERVATIONS

anadian businessman approaching the
s reservation desk in Paris was weary
npatient. Delayed by frustrating details
transactions, he had a business engage-
in Toronto next day, and on the follow-
y was supposed to be home in Winni-

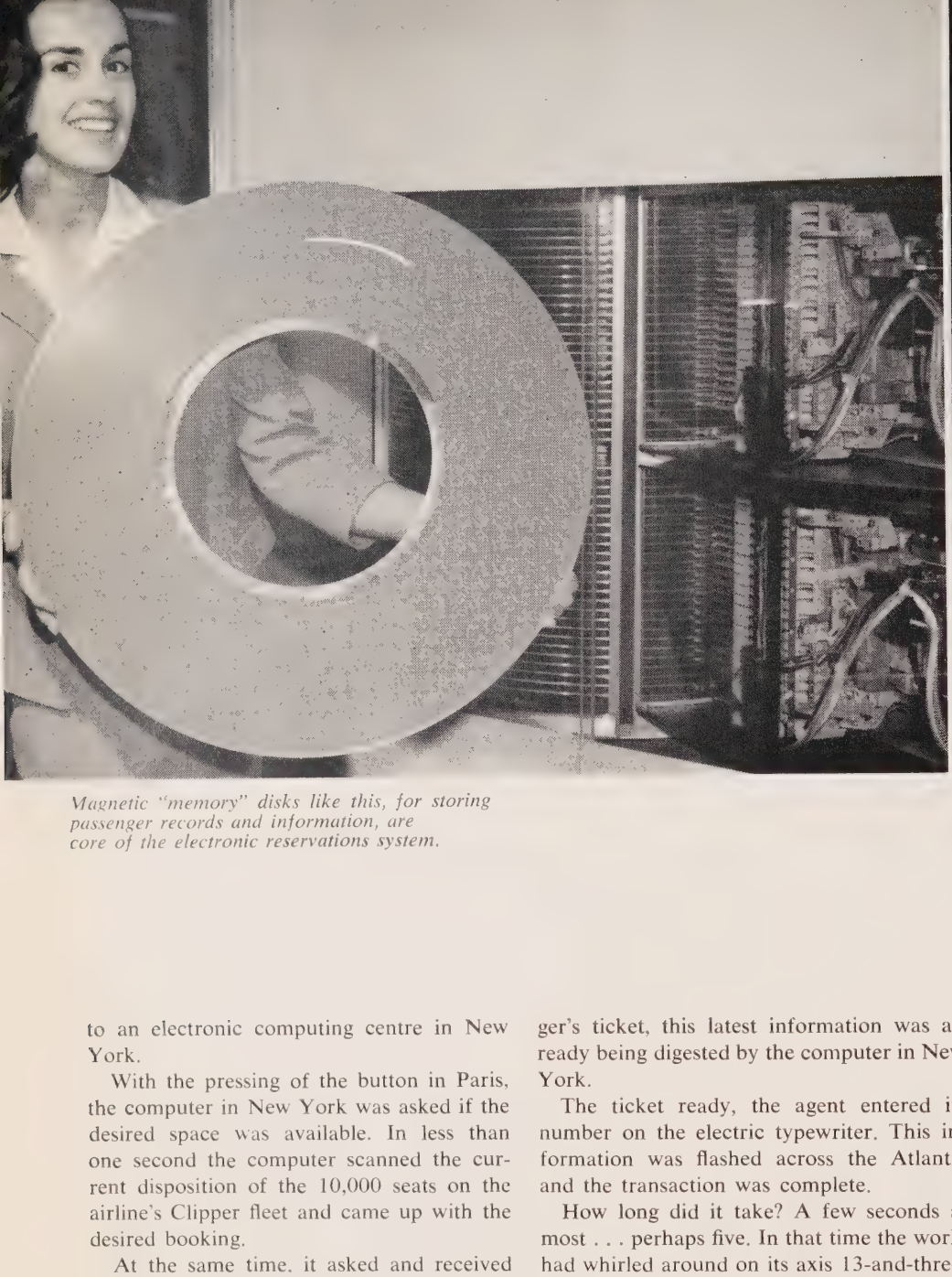
made his flight requirements known
e reservations desk and gloomily re-
himself to a long wait for confirma-
tion. Seated, he reached into his pocket for a cigaret.

Meanwhile, the reservations agent selected a card from a file, inserted it in a slot on the console mounted on the desk, depressed various keys and pressed a button.

Our man from Winnipeg was in the act of lighting his cigaret when the agent's voice cut in to say that reservations were complete: from Paris to New York by Pan American and on Air Canada flights from New York to Toronto, and from Toronto to Winnipeg.

If our hero's recovery from the astonishment of such service was hastened by the forgotten match singeing his fingers, it is understandable. It was his first experience with a new world-wide electronic reservations system — a system which includes 700 reservation sets, such as the one in Paris, installed in 114 cities on six continents. All are linked

**Electronics are splitting split seconds to serve today's busy traveller.**



*Magnetic "memory" disks like this, for storing passenger records and information, are core of the electronic reservations system.*



*Details of a passenger's request for bookings ar contained on reservation card being fed into Air Canada's ReserVec transactor.*

to an electronic computing centre in New York.

With the pressing of the button in Paris, the computer in New York was asked if the desired space was available. In less than one second the computer scanned the current disposition of the 10,000 seats on the airline's Clipper fleet and came up with the desired booking.

At the same time, it asked and received confirmation from Air Canada for the connecting flights from New York through Toronto. As well as record the complete reservation, the computer automatically flashed the sale to an electric typewriter on the console of the reservation set in Paris.

The Paris agent entered the passenger's name, address and telephone number on the typewriter keyboard, and while she was reaching for a pen to make out the passenger's ticket, this latest information was already being digested by the computer in New York.

The ticket ready, the agent entered its number on the electric typewriter. This information was flashed across the Atlantic and the transaction was complete.

How long did it take? A few seconds at most . . . perhaps five. In that time the world had whirled around on its axis 13-and-three-quarter miles and 10 babies were added to the world's population.

The heart of the system in which our man from Winnipeg was involved is an antiseptic-like room in New York on the fourth floor of the world's largest office building. Alongside a bank of computers is the system's information storage section, which resembles a huge juke box.

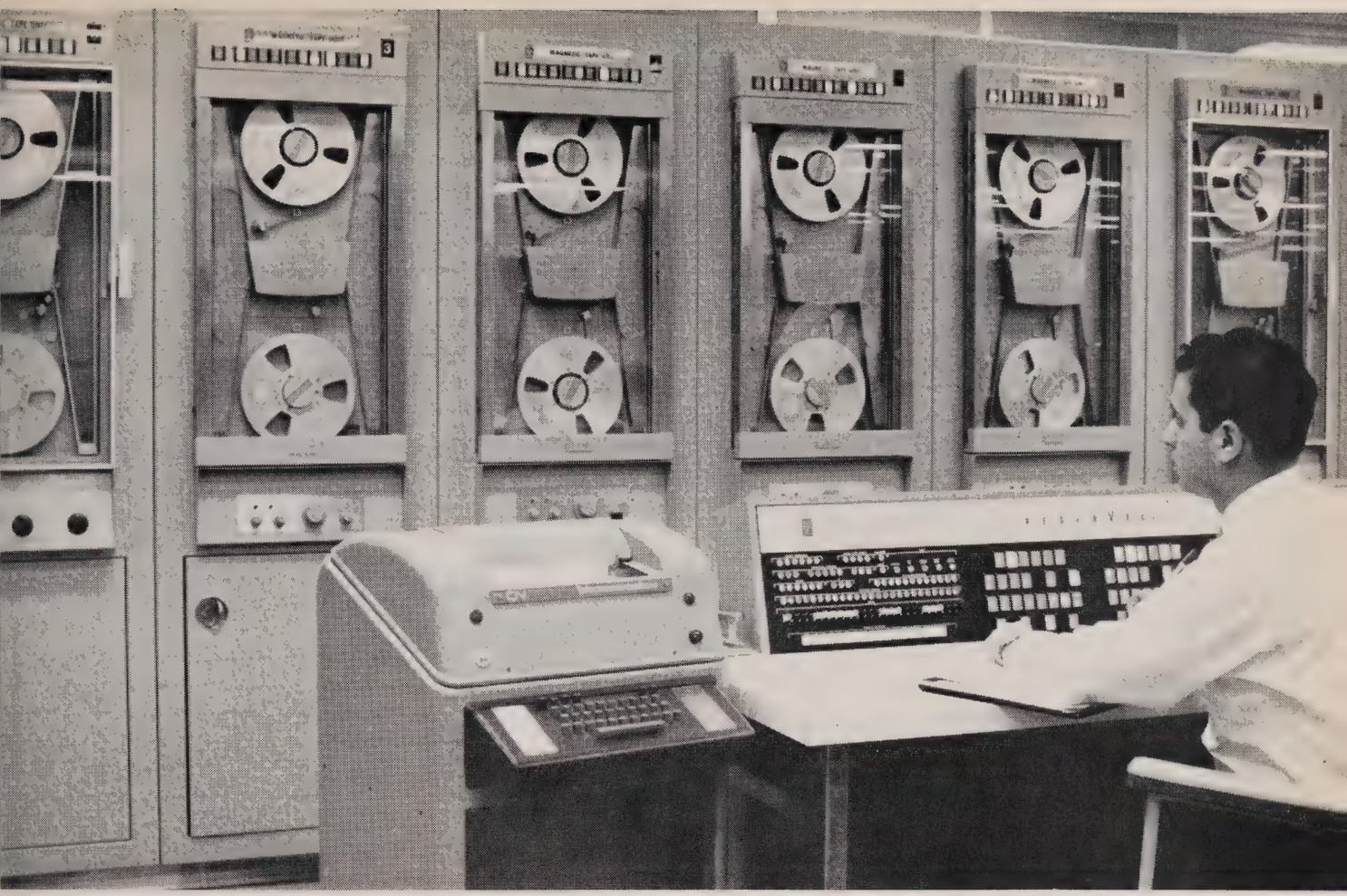
The storage system consists of 400 disks, which except for their large size, are not unlike phonograph records. They are capable of storing no less than 550,000,000 pieces of information.

When the computer had routed deta the Winnipeger's Paris inquiry throug proper channels, all the questions were centrated magnetically in what is knov a reading head. The reading head's act similar to that of the fork in a juke searching out a record. In less than second it ferrets out the desired inform stored in the disks. The information extr was flashed to the computer and fro computer to Paris.

The head also functions as an impr instrument to put information on the In this way it recorded the sale of sp the gentleman about to have his finger in Paris, complete with arrangements with Air Canada.

The first segments of this world-wid tronic reservations system were ope Toronto and Montreal. Vancouver wa phased into the 165,000 miles of sub cables, radio circuits and landline

*electricity on the job*



*Behind the scenes computer room at Air Canada's electronic reservations centre in Toronto. The monitor teleprinter is at left of console.*

close to 100,000 inquiries a day flow
ne computing centre in New York.
Canada's own electronic reservations
n — one of the most modern of its
n the world — is soon to become even
sophisticated.
own as ReserVec, the system began
ting in June, 1962, and now makes re-
ions in 60 centres scattered over 39,000
of air routes in Canada and the U.S.
centres served by Air Canada, includ-
ose in the Caribbean and Europe, are
to the system's central registry in To-
by teletype.
ivity in ReserVec's central registry
es around a general purpose twin com-
and a number of magnetic memory
and drums and ancillary equipment.
ies and information flow into the centre
almost 400 transactors, or agent's hand-
ocated in offices across Canada and U.S.
make a reservation under the present
n, an agent indicates with a pencil on a preprinted card all the information pertinent to the passenger's request for a seat. The card is then inserted in the adding-machine sized transactor. The transactor automatically "reads" the pencil marks and flashes the information to the computer in Toronto.

The computer scans the reservations inventory and returns an answer within two seconds. If no space is available, the computer suggests space on alternate flights.

Air Canada says that by eliminating four of the five manual processes formerly required to make a reservation, ReserVec has reduced the human error factor by four-fifths. The possibility of error will be further reduced as the result of refinement now under way.

Heart of the revamped system will be a massive electronic memory capable of selecting and reading any desired item of information from a file of up to 960-million characters — and doing it in one-fiftieth of a second.

That's faster than the flick of an eyelid, and five times faster than any disk memory file now in operation.

Today's computers were pressed into the service of airlines to accommodate the jet age. The next epoch was supposed to have been the supersonic age. But according to at least one authority, the president of Canadian Pacific Airlines, at the rate things are developing the super-sonic may be skipped and the world plunge directly into the age of airships in which air passengers will be rocket-propelled through space at 17,000 miles an hour.

At that speed man will be able to go anywhere in the world in 40 minutes. Computers will doubtless point the way to such advances.

Perhaps this is the sort of prospect that recently impelled an American scientist to design an atomic clock guaranteed to lose not more than one second in a thousand years. □

# PROGRESS ON THE



# MADAWASKA

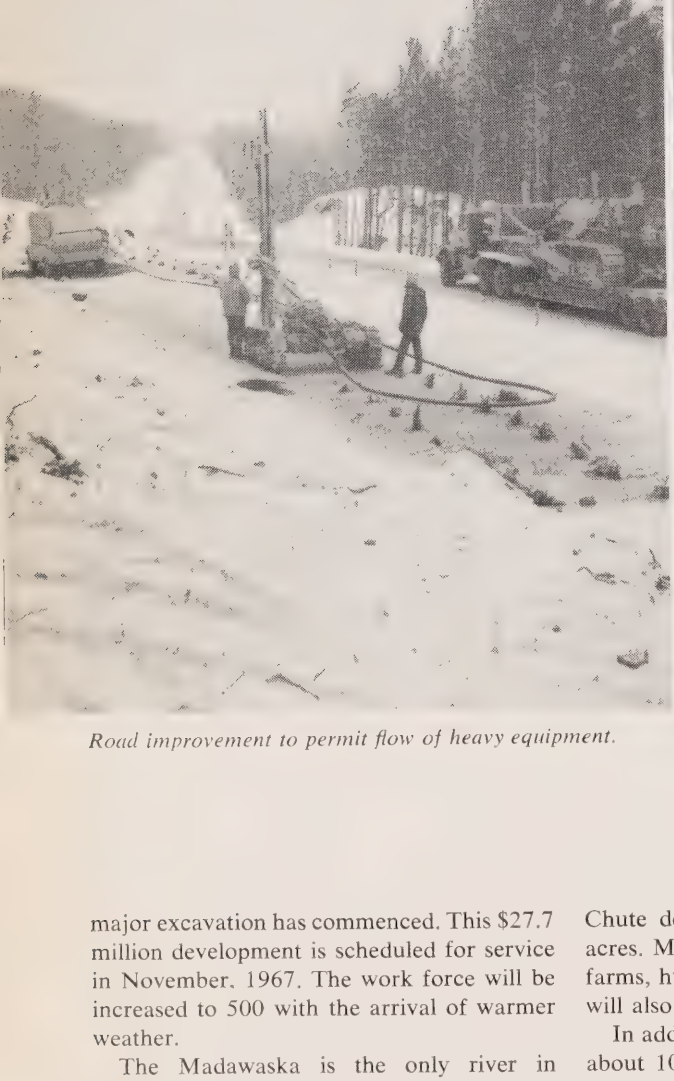



*Topography of work area at Mountain Chute is depicted in aerial photo, far left. They are starting to build travelling gantry tower, left, which will support huge revolver crane for use in construction.*

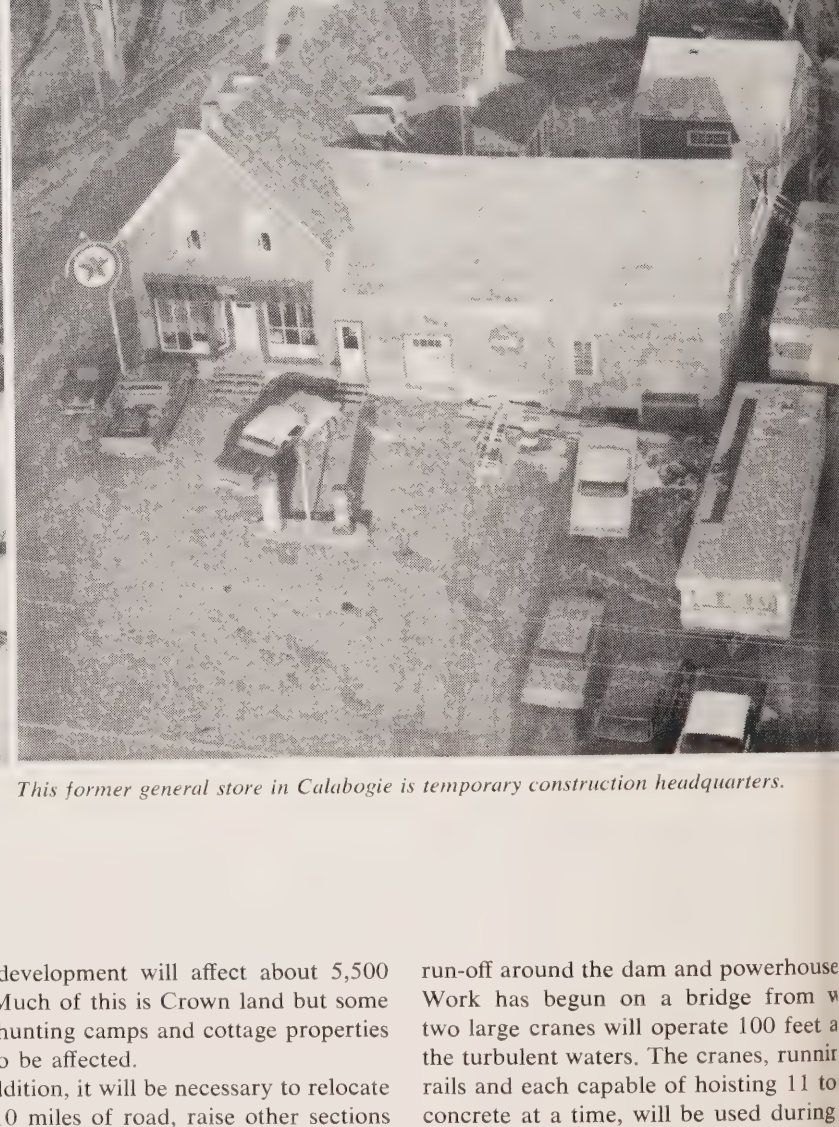
**Preparatory work is well advanced and Hydro is poised for an all-out assault on Mountain Chute with the coming of spring.**

After an absence of 15 years, Ontario Hydro is again turning its attention to the Madawaska where a project is getting underway which will dwarf the Commission's previous power developments on this river. At Mountain Chute, 22 miles southwest of Renfrew, about 280 men are already at work on a 160,000-kilowatt project where initial concrete will be poured after the spring break-up.

Preparatory work has included removal of rock and soil along the main dam line and



*Road improvement to permit flow of heavy equipment.*



*This former general store in Calabogie is temporary construction headquarters.*

major excavation has commenced. This $27.7 million development is scheduled for service in November, 1967. The work force will be increased to 500 with the arrival of warmer weather.

The Madawaska is the only river in Southern Ontario with undeveloped sites of significant size. The proximity of Mountain Chute to existing municipalities eliminates the need for on-site accommodation such as is required in the more remote areas. Ready access has been provided with the construction of a four-mile road to the site from a point on Highway 508 about seven miles south of Calabogie.

Under a cost-sharing agreement with the Ontario Department of Highways, Ontario Hydro is also rebuilding some four miles of Highway 508, at present a narrow and winding road. Contractors will build another stretch of road and improve further sections of the highway later this year.

Flooding in connection with the Mountain Chute development will affect about 5,500 acres. Much of this is Crown land but some farms, hunting camps and cottage properties will also be affected.

In addition, it will be necessary to relocate about 10 miles of road, raise other sections and build a bridge. The contour of the plant's headpond has been blazed and clearing is about to commence. Timber in the flooded area will be harvested by private contractors and the holders of timber licenses in the area.

Temporary construction headquarters have been located in a former general store in Calabogie but office buildings, maintenance shops and warehouse facilities are reaching completion at the site. Heavy material and equipment will be brought to Calabogie by rail and on to the site over the improved road system.

Excavation of a diversion channel on the south bank of the river has commenced and it is expected to be ready to carry the spring run-off around the dam and powerhouse Work has begun on a bridge from w two large cranes will operate 100 feet a the turbulent waters. The cranes, runnir rails and each capable of hoisting 11 to concrete at a time, will be used during struction of the 175-foot-high dam.

No transmission line construction volved in the new project since the p transformer station and switching fac will be built under the existing 230,00 line from Chenaux G.S. This line was in 1950 with the knowledge that Mou Chute would eventually be developed.

Largest of Hydro's past developmer the Madawaska was Stewartville G.S., miles west of Arnprior. Completed in it has a capacity of 61,200 kilowatts.

Barrett Chute, just four miles from bogie on the Madawaska, was built by in 1942. Its capacity is 40,800 kilowa tiny, 4,000-kilowatt plant at Calabogi purchased by the Commission in 1929




*ıdled forlornly at the Black Donald minesite, these abandoned buildings are about all that remains of a once thriving enterprise.*

# BLACK DONALD GRAPHITE

**ng the colorful episodes of past brought to mind by Hydro's rn to the Madawaska ıe story of the Black Donald mine.**

en the headpond of Ontario Hydro's untain Chute power development on the dawaska begins to fill in 1967, the lapping ers will hide virtually all traces of what once the largest and richest flake graphite e in North America. From 1934 until it ed, Black Donald was the sole producer graphite in Canada. During a half tury of production, it turned out millions ounds of the non-metallic mineral which refined at a mill on the site.

Graphite and diamond are the common eral forms of carbon. Graphite is used in the foundry field and is an important ingredient in the manufacture of chemicals, special paints, batteries, pencil "lead" and lubricants. Black Donald was the only producer on the continent of flake graphite suitable for lubricants.

About the time Black Donald ceased production, graphite made from anthracite coal in electric furnaces could meet all the requirements of the natural product and was able to undersell it.

Ore of 10 per cent carbon content was considered profitable mining grade. Black Donald ore averaged 20 per cent for 50 years, often sweetened by pockets that assayed from 95 to 99 per cent carbon, found in deposits from 10 to 30 feet thick.

The Black Donald graphite deposit was discovered in 1894. Mining started in 1896 and was continued as a family enterprise until all readily extractable ore had been removed. The workings were abandoned in 1938 and allowed to flood.

Four years later, graphite was classified as a strategic war material owing to the uncertain delivery of the mineral from Ceylon and Madagascar. At the request of the Metals Control Board, the Frobisher Exploration Company re-opened Black Donald to assure the Allied industrial war machine of a reliable supply.

This salvage mining ended in 1954 but not before Frobisher had extracted nearly 50,000,000 pounds of refined graphite from a mine which had previously been considered depleted. (*continued on next page*)



*Tiny by Hydro standards, this 400 h.p. plant on Madawaska bank used fraction of site's potential to supply power to Black Donald mine. Operator's house, is typical of log construction prevalent in area. Mine caretaker Ard Wagar, below, used Black Donald millstones for his patio.*



Ontario Hydro purchased the property 1947 with the Mountain Chute project mind and with the understanding that F bisher might continue to operate the mi until the site was required for power pr duction.

Nor was the history of the Black Don without incident. Situated on the shores Black Donald (Whitefish) Lake, some of t shafts extended out under the water — circumstance which led to a cave-in a flooding in 1901. Fire destroyed much of t mill in 1917 and disaster struck again in 19 when, according to the Ottawa Journ November 22:

"Residents of the Village of Black Don stood by on Sunday and watched the wa of White Fish Lake suddenly cave in graphite mine in which the male populati worked — sending huge water spouts sho ing skyward and hurling pit timbers alo Providentially, the cave-in came on Sund when no workers were in the mine."

The mining company took the set-ba in stride and decided the property was yet ready to be closed. Some sections of flooded mine were pumped out and oth filled with tailings. Mining continued on open-pit basis behind an 800-foot coffer thrown across a section of the lake.

No longer profitable, the mine was clo in 1954 and the mining charter surrende in 1962. Following cessation of operati the complete plant was sold and the worki allowed to fill.

The remains of the mine buildings an few staff houses will be cleared before headpond area is flooded. Standing on hig ground, the community church will rem Near it, at the house of the caretaker, remained after the mine closed, groo stones used in the refining operation h been converted into a rock garden and p of unusual charm and design.

The mine and its history are not to confused with the Village of Black Don a country crossroads that lie a few m away. It was established originally as a w depot farm by a lumber company. H fodder was grown for the company's ho and hogs, beef cattle and vegetables raised for the woodsmen. The depot b ings still stand, although owned priv these many years. There are also a few ern dwellings nearby.

That odd name, Black Donald, suppo comes from a Glengary Scot lumbe giant of the white pine era who was standing for some characteristics now l the memories of today's oldest citize the district.

Had he been Paul Bunyan himself, Donald could not have left more st achievements than were chronicled the half-century life of the mine whic his name.

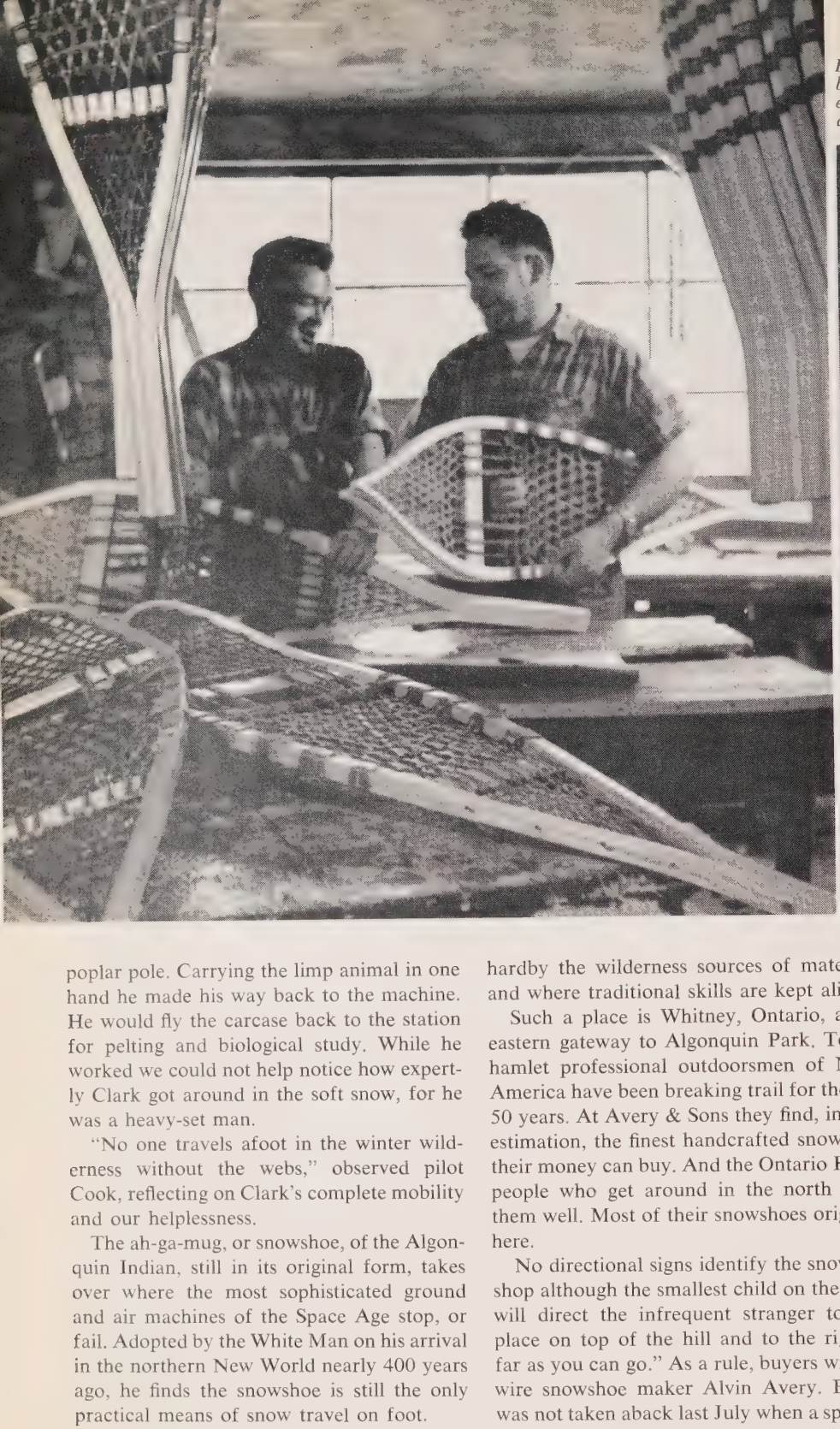
ries old, snowshoes are still the only practical way to get around on foot in deep snow.



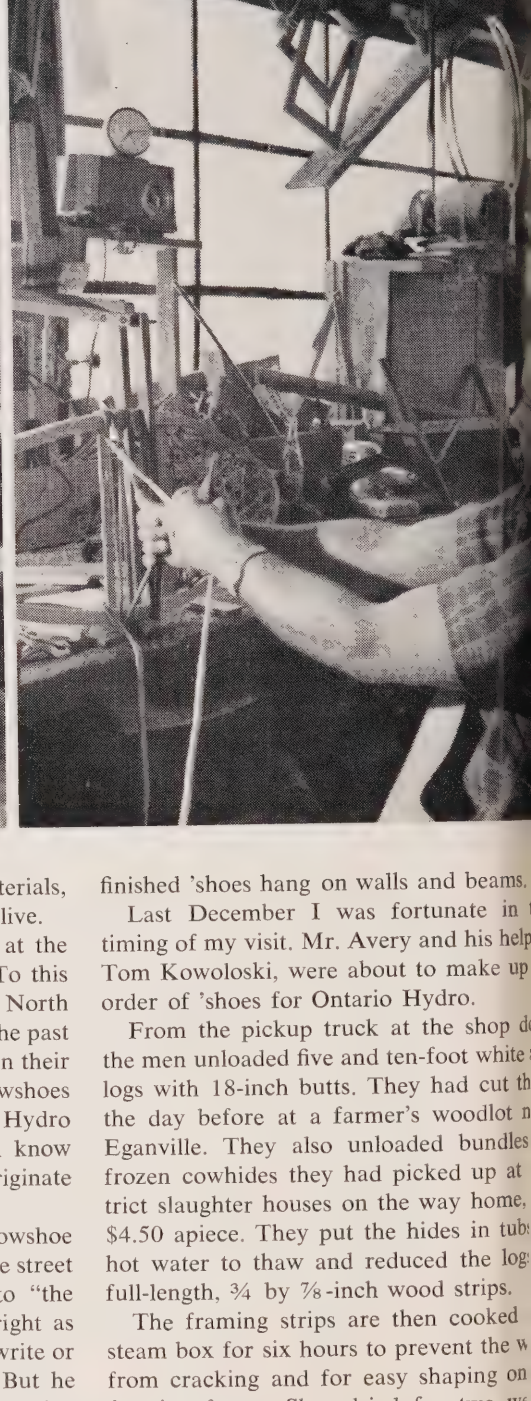
# VEBS OVER THE WILDERNESS

Nick Nickels

hovering helicopter settled almost on top of the beaver dam in a fine whorl of blowing snow and its rotor
e swung lazily to a stop.
epartment of Lands and Forest's staff trapper Ken Clark, from the Algonquin Park winter research
on ten miles away, eased himself backwards out the starboard door of the machine's bubble.
e pulled a pair of snowshoes from their lashing on the side of the gas tank, twisted into the foot harness and
le 50 yards over the deep snow to a "beaver set" in the spillway of the dam. Pilot Troy Cook and
tched him from the seat of the helicopter.
lark hauled a carcase from the water — it was a pilfering otter's — and re-set the trap on the end of a



*For more than 50 years the Avery family of Whitn been turning out quality snowshoes for sportsmen and ern workers. Alvin Avery is shown here at a variety o ations involved in production of the webbed foo*



poplar pole. Carrying the limp animal in one hand he made his way back to the machine. He would fly the carcase back to the station for pelting and biological study. While he worked we could not help notice how expertly Clark got around in the soft snow, for he was a heavy-set man.

"No one travels afoot in the winter wilderness without the webs," observed pilot Cook, reflecting on Clark's complete mobility and our helplessness.

The ah-ga-mug, or snowshoe, of the Algonquin Indian, still in its original form, takes over where the most sophisticated ground and air machines of the Space Age stop, or fail. Adopted by the White Man on his arrival in the northern New World nearly 400 years ago, he finds the snowshoe is still the only practical means of snow travel on foot.

Ah-ga-mug, web, racquet or call it what you will, the snowshoe is the life preserver of the snows. It embodies lightness for dexterity, ruggedness for rough usage and long wear. No new wonder metals, plastic or synthetic cordages have improved upon or replaced the rough rawhide filler and springy wood frame.

Snowshoe making has remained almost a cottage industry, confined to communities hardby the wilderness sources of materials, and where traditional skills are kept alive.

Such a place is Whitney, Ontario, at the eastern gateway to Algonquin Park. To this hamlet professional outdoorsmen of North America have been breaking trail for the past 50 years. At Avery & Sons they find, in their estimation, the finest handcrafted snowshoes their money can buy. And the Ontario Hydro people who get around in the north know them well. Most of their snowshoes originate here.

No directional signs identify the snowshoe shop although the smallest child on the street will direct the infrequent stranger to "the place on top of the hill and to the right as far as you can go." As a rule, buyers write or wire snowshoe maker Alvin Avery. But he was not taken aback last July when a sporting goods dealer in San Francisco phoned him for some 'shoes; the dealer's Japanese imports were not standing up.

From the outside, the Avery shop is dark and non-descript. Darker still inside, the visitor must pick his way carefully between a band saw, piles of shavings, an ingenious paddle-making machine, two oil drum heaters and several upended forms holding pairs of drying snowshoe frames. Festoons of finished 'shoes hang on walls and beams.

Last December I was fortunate in timing of my visit. Mr. Avery and his help Tom Kowoloski, were about to make up order of 'shoes for Ontario Hydro.

From the pickup truck at the shop d the men unloaded five and ten-foot white logs with 18-inch butts. They had cut th the day before at a farmer's woodlot n Eganville. They also unloaded bundles frozen cowhides they had picked up at trict slaughter houses on the way home, $4.50 apiece. They put the hides in tub hot water to thaw and reduced the log full-length, ¾ by ⅞-inch wood strips.

The framing strips are then cooked steam box for six hours to prevent the w from cracking and for easy shaping on framing forms. Shop-dried for two we the frames are morticed and the ash or m toe and heel bars inserted. Pairs of hole drilled to receive the rawhide lacing "babiche".

A cow hide, de-haired with a straight and examined for cuts and possible w fly defects, is reduced by a simple cutting to a continuous spiral of soggy lacing ha inch wide. Each hide yields about 480 of babiche, enough to make three pai







hoes. The finer lacing required for the d heel sections is made by splitting the rd babiche in half. All lacing is soaked y water for easier handling in weaving. ng the snowshoe frames is a messy r. Avery wears oilskin coveralls when down to the job. Pulling tight each of warp and woof, his bobin-like fin- ork quickly on the time-tried patterns e not only too intricate to describe but ering to behold.

centre sections of the 'shoe is coarse and bound around the outside of the To prevent the babiche from being sharp crust and abrasive wear, the oe and heel lacing is woven into rsunk drill holes around the outside frame.

taut, woven babiche quickly shrinks o the frame and dries completely in urs. Each 'shoe is given two coats of ed spar varnish and hung to dry. It y for shipping.

n Avery and his assistant make 10 f snowshoes a day from October to 'Shoes for adults measure 13 and 14 wide by 52 and 54 inches long. Cus- ade shoes for tall, heavy men mea- o to 66 inches. An average pair of Avery snowshoes weighs five pounds and retails for about $20.

The use of the snowshoe is on the upswing in Canada, Mr. Avery says. There are greater numbers of professional outdoorsmen and more members of revived or newly-formed snowshoe clubs. And they are a natural accoutrement of the mechanized toboggans which are becoming so popular.

An estimated 15,000 pairs are produced annually in the nation — about half of them in a factory in Fredericton, New Brunswick. Avery & Sons account for about five per cent of the production.

While working deftly on various operations and explaining each step in detail, Mr. Avery larded his lecture with a deal of snowshoe lore accumulated during his 25 years of crafting and from his father's 25-year stint before that.

The traditional moccasin and shoe pack worn by past generations of snowshoers have been replaced in the main by soft rubber footwear and insulated hard boots — workers in the north being loath to change their regular footwear for snowshoeing.

Patented leather snowshoe harness that buckles onto the foot is most satisfactory while tanned leather thongs make an acceptable substitute.

A snowshoer must be thoroughly familiar with his harness hitch so that he is able on the instant to slip out of it with a side twist of the foot. A snowshoer who falls after skidding on snow-covered deadfalls or brush or drops through thin ice into water must be able to get out of his webs in a hurry.

A powder snow cover over crust makes ideal snowshoeing conditions while heavy, wet snow is worst.

Snowshoes should be dried after use but not close enough to wood stoves or campfires to scorch the lacing. To store during off seasons 'shoes should be varnished and hung up by the toe slots, for if left standing against walls the frames become warped.

The Avery snowshoe comes in three types, round-toed, pointed-toed and circular bear paw. Snow conditions in the open forest of the North demand the long and narrow 'shoe. Bear paws are favoured in mountainous, heavily-timbered regions.

How long does a pair of snowshoes last?

Mr. Avery reveals his use of the best materials and honest workmanship when he answers,

"If my snowshoes didn't last so long I wouldn't be such a poor man." □



*Line construction is just one of the Hydro jobs where snowshoes are sometimes a necessity.*

# HYDRO ON SNOWSHOES

It wasn't so very long ago when the crack of a dog whip and the monotonous swish-swish of the snowshoe were the only sounds heralding progress of the transmission line patrolman in the more inaccessible areas of the province. The guttural bark of the helicopter ended this era but Ontario Hydro personnel still find plenty of use for the webbed footwear of the north — and in much the same form as it was worn by the Indians long before the White Man arrived.

Surveying, land clearing, forestry and line maintenance are among the many jobs sometimes carried out on snowshoes and it is ironical that the helicopter, latest word in line patrol equipment, itself carries the lowly leather-and-wood racquets for use in Northern emergencies. In the past four years, Ontario Hydro has purchased more than 500 pairs — most of them from the Whitney operation described elsewhere on these pages.

Not that Hydro is sticking to the traditional through any sense of romantic obligation — it's just that the ash-framed cow hide product is hard to surpass. And they have tried.

Extensive field trials were carried out by Hydro with magnesium 'shoes and while these had certain advantages they were soon abandoned. Their lightness and strength was outweighed by their cost, a tendency to slip forward and backward, and poor support on light, deep snow.

Then plastic seemed to be the answer. Prototypes designed by one of Hydro's material committees, and turned out by the Research Division, showed such promise in the field that 25 pairs were ordered, with modifications suggested by experience.

About the same weight as the conventional wooden snowshoes, the plastic models were impervious to accidental axe nicks, wet snow did not stick to them and they were thought to be virtually indestructable.

Hand made, they cost about 70 dollars a pair but, with the use of an expensive mould, the price might have been reduced to a competitive 20 dollars.

Disaster struck when the snowshoes began to part company at the welds and while economics did not warrant further development by Hydro, the men involved remain convinced that the basic concept is sound.

Meanwhile, modern technology bows to the Red Man who learned long ago to get around on webs fashioned from the materials of nature with the crudest of tools. □



*of the new District 5 OMEA executive, left to right, seated, are:*
*tten Jr., Brantford, 2nd vice-president; Dr. J. D.*
*Dundas, president; J. A. Camelford, Dunnville, 1st vice-president.*
*Arthur Bennett, St. Catharines and Andrew Frame,*
*n, directors; R. J. Jones, Niagara Falls, past president;*
*Klager, Fonthill and William Rannie, Beamsville, directors.*



*A house model with one half insulated to electric heating standards attracted the attention of delegates. Accepting the display's invitation to "feel" are, left to right: Gordon Klager, Fonthill; A. E. Fort and E. H. Barrick, Port Colborne; and Cecil Swayze, Welland.*

# ECTRIC ATING LES OMINATE MEA SCUSSIONS DUNDAS

exchange of ideas on the topics of heating and sales promotion was a t of the annual winter meeting of 5, Ontario Municipal Electric As-n, held at Dundas, in January. More ) Hydro commissioners from centres out the Niagara Peninsula and the n-Brantford area attended the half-ference.

ates paid close attention during a udy of actual case histories of electric sales and later quizzed the four in depth. Panelists were utility sales tatives W. L. Pemberton, Burling-R. Muirhead, Niagara Falls; Bert Dundas; and Dennis Chafer, Brant-oderator was Jack Wrattan, of Brant-

ne subject of town houses, or estate ales, the panel emphasized the importance of constant liaison with the planning or building departments of municipalities to learn of proposed projects. Early contacts were recommended with the company principles, the rental agency, the architects and even the job foreman or superintendent. It was sometimes surprising who makes the ultimate decision on heating or who will influence it, the panel contended.

Contact should also be maintained with tenants to impress the owner with the utility's interest in his project, and to emphasize the fact that Hydro is a service.

Costs of heating town houses were said to be very competitive. Individual room control and all-electric rates appealed to building owners.

On motels, the panel believed that experience was teaching the motel industry the logic of electric heating and that in time less emphasis might be necessary on "hard sell."

Common reasons enumerated for motel sales of electric heating included freedom from maintenance, quiet, low capital cost and individual room control. The fact that electric heating can mean one more rentable space in the absence of a boiler was another good selling point mentioned.

Commissioners were urged to maintain contact with motel owners after the sale to keep abreast of the needs of the industry, and changes in construction techniques.

Outlining the successful means employed in selling the all-electric concept to the $2,700,000 Highland Secondary School, to be built this spring in Dundas, Bert Boyle said the questions posed by the school board were beyond the ability of most salesmen to satisfy. It took the combined and concentrated efforts of salesmen, management and Ontario Hydro specialists to provide the answers.

"Before it was even decided that a new school would have to be built we made sure that everyone even remotely connected with the subject received all the information and literature on electric heating that was available," he said. "In the early stages our management presented the electric heating concept and were assured our proposals would be seriously considered in the board's plans.

"We arranged a tour of a college in Strubenville, Penn., which has the type of total-electric installation that we were proposing, and all parties involved made the trip. There is no doubt in my mind that this trip finalized the sale."

Dinner speaker George Gathercole, first vice-chairman of Ontario Hydro, emphasized the value of Hydro's reserve fund in compensating for the effects of low water levels in recent years. He outlined Hydro's efforts to avoid any changes to the existing rate structure.

The election of officers saw Dr. J. D. Fleming, Dundas, named president. J. A. Camelford, Dunnville, and Jack Wratten, Jr., Brantford, were named first and second vice-presidents respectively. □

# TRENDS IN ELECTRICAL

People who coin phrases to meet situations are calling our period of time the computer age, the nuclear age, the space age, the age of automation and electronics . . . everything denoting a swift transition from a mechanical method of doing things to a state of instantaneous procedures and results.

Electricity, in one form or another, is tied into most of these developments, whether it's intricate control circuitry found in data processing machines and computers or automatic feeders for farm animals.

And with this advanced electrical technology comes the need for more and more young people to train, not only as engineers, but as the skilled technicians and technologists required if industry is going to keep up with developments. Even the future farmer needs more detailed electrical knowledge if he is going to farm successfully.

But where do these people receive this specialized training in Ontario? What do they study? And just what do they have when they graduate?

In examining the teaching of electricity in Ontario, it's logical to start at the secondary school level where the student is first introduced to electro-magnetic theory. Under the Reorganized Programs of Study, which did away with the old, single-minded general, technical and commercial courses three years ago, a new "streaming" system provides a much greater choice for the technical student.

There are now two streams a student can enter. He must choose in Grade 9 between a five-year or a four-year course, depending on how far he plans to go with his education. In the five-year plan he can select Arts and Science, Business and Commerce or the Science, Technology and Trades courses, all of which lead to a common Grade 13. Students in each division devote 80 per cent of their time to academic subjects. The remainder is spent on options. In the Science, Technology and Trades section, the student is prepared for further education at university or technological institutes. His options, all technical, include auto mechanics, drafting, electricity and machine shops.

Four-year courses take the student to Grade 12 and are arranged in the same groupings. The four-year Science, Technology and Trades division, which can lead to skilled apprentice and trade courses for its graduates, emphasizes shops in its Grade 9 and 10 curricula; with the student specializing in electrical shop (or some other technical option) in his last two years.

"The re-organized program in secondary education recognizes that students with different talents, goals and interests should have different courses," said Arnold Baerg, head of the Guidance Department at Waterloo Collegiate Institute, which was opened in 1960 and has 1,700 students.

At Waterloo Collegiate, there are two main electrical workshops, where classes are conducted under the direction of Heinz Peper. "Here, Grades 9 and 10 are taught the basic fundamentals of electricity and learn to use instruments", explains Mr. Peper. He has nine years experience in teaching electricity to teenagers. "In the upper grades, the emphasis is on instruments, such as the oscillascope for measuring voltage, and advanced circuitry. And part of the course deals with the more conventional subjects such as house wiring.

"I believe if the student understands the theory behind capacitance, inductance and resistance and can handle instruments, then he is prepared to enter an apprenticeship or further his formal education in the electrical field."

What about the future farmers and people who will eventually be classified as technologists in various industries supplying farms. Murray Young, who teaches agricultural science at the Orangeville District High School and who is president of the 200-member Agricultural Science Teacher's Federation of Ontario, had this to say:

"Our curriculum is more flexible than the average science course and electricity and its applications crops up in many of our class discussions. Nearly every aspect of farming today has some connection with electricity and it would be safe to say that most farms are electrically run. We feel that it is important for these youngsters to know how to read a meter, and understand wiring. They must also learn about various kinds of electrical motors and their maintenance. Modern applications of electrically operated machinery is another important subject."

Secondary schooling completed, the student may choose to further his electrical education at either the Institute of Trades in Toronto, Vocational Centers at London and Ottawa or at an Institute of Technology. All these schools and courses are directed by the Technological and Trades Training branch of the Ontario Department of Education which was established in 1963.

At the Institute of Trades and at the other vocational centres, a young man can study basic electronics, industrial electricity and industrial electronic control. Or, if serving an apprenticeship to become an electrician, he must attend one of these schools to complement his on-the-job training. In addition, the Provincial Institute of Trades and Occupations in Toronto offers courses in electric motor repair and electrical appliance servicing.

The next step in training is at the electronic technician level. These specialists may take electronic training in radio and television servicing or communications at Vocational Centres or the Institute of Trades. "And beginning in September, we are offering an electrical technician course. These people, who must have Grade 12 to qualify, will be able to work with contractors or even go into sales," said Gordon Wragg, principal of the Provincial Institute of Trades.

These two-year courses enable the graduate to apply for certification as an engineering technician to the Association of Professional Engineers of Ontario. Three-year electron

*These Grade 11 technical class students are ears as the instructor talks electricity at Wat loo Collegiate. Note well-equipped bench*

# :ARNING

**With its theme "Accent on Youth", Electrical Week prompted us to examine the changing scene in electrical learning below university level.**

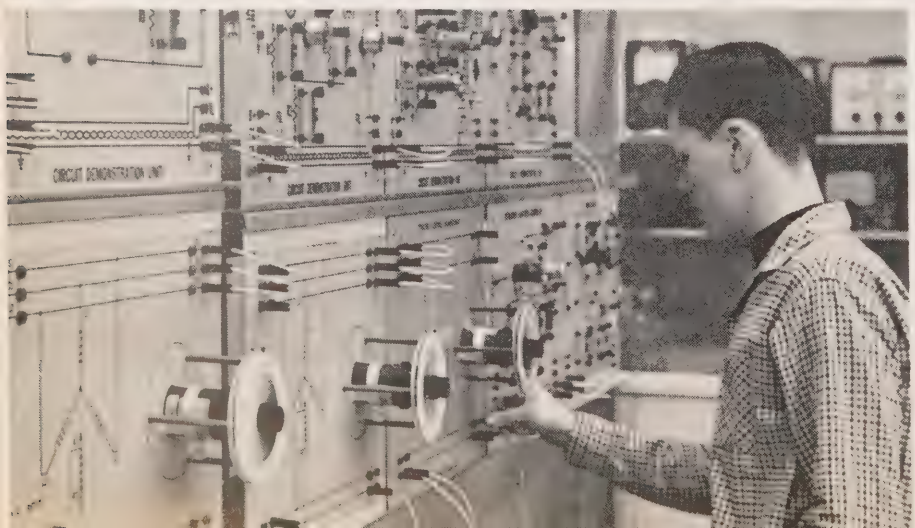
by LOIS LANE

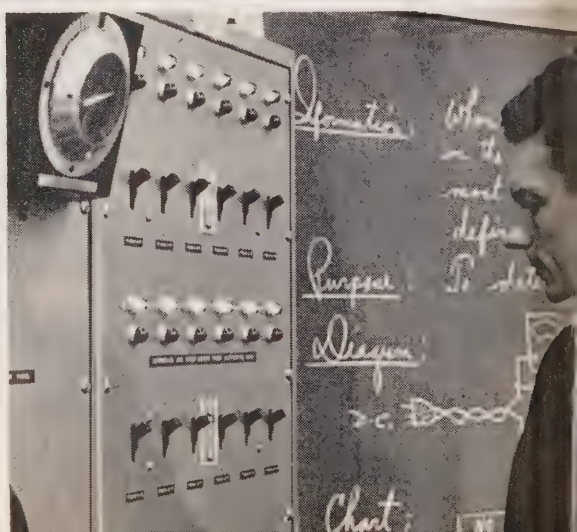







ELEC TRIC
TO OLS
CIRCUIT STUDY
BOA RDS
EXPERIMENTAL
APPARATUS
APPARATUS
STUDY





*programing, far left, sory subject for engineering technol- usiness students n. Spectrum analyser, use in radio ations lab at Ryerson.*

*s will gasp at equip- th $60,000, in nted electrical labs oo Collegiate. each seat 24 students.*

*Collegiate student, ses a three- C. demonstration unit. ctor, Heinz ft, heads the elec- rtment.*

or electrical engineering technology courses are offered at any of the four Provincial Institutes of Technology, located in Ottawa, Hamilton, Kirkland Lake and Windsor. Ryerson Polytechnical Institute now operates under its own board of governors and is not connected with the provincial institutes.

At Ryerson, as at other Institutes of Technology throughout the province, there are two divisions of electrical instruction — electronic and electrical. This year there is a common first year, with the emphasis on more academic subjects such as mathematics. In second year specialization in electricity begins, and in the final year, the student concentrates on either the electrical curriculum or on electronics. The electrical student studies control systems, electrical machines and network theory in detail, while the electronic student places emphasis on pulse circuits, electronic circuits and systems, and nucleonics — the study of atomic energy in its practical applications.

"Electronics technology is advancing rapidly, and we try to keep up with new developments as soon as they become commercial," said J. W. Speight, chairman of the electrical and electronics sections. One recent innovation he noted was the teaching of computer programing to all third year engineering technology and business students.

"Once a person graduates from Ryerson he is termed a technologist and can be certified by the Association of Professional Engineers of Ontario," he said. "I might point out that the term technologist can be confusing, as in Britain and Europe, a technologist is a scientist or engineer. Here in Ontario this person is an engineering assistant, and I believe that the rest of Canada is starting to go along with our terminology."

Thanks largely to a "stay-at-school" campaign, a more satisfactory percentage of secondary students are continuing their studies to graduation but there is still a crying need for more to train as technicians and technologists.

"It is almost a truism that a fundamental effect of automation is to push down the demand for workers with little education and training and to push up the demand for workers with high educational qualification and large amounts of training," Dr. Arthur Porter, head of the University of Toronto's industrial engineering department said in a recent speech to the Royal Canadian Institute, "The major bottlenecks in the future will be caused by shortages of highly skilled people rather than through shortages in capital equipment." □

# FARM AND HOME ELECTRIC CLUBS

Electricity is replacing elbow grease on Ontario farms and it is becoming more and more important that tomorrow's agriculturists get to know as much as possible about their invisible "hired hand."

To help Mr. and Mrs. Farmer of the future in this regard, the Ontario Department of Agriculture sponsors nine 4-H Farm and Home Electric Clubs throughout the province. Ontario Hydro donates the services of its farm sales supervisors as instructors.

The pilot organization was launched in Middlesex County, in 1961, with 16 members. Now there are 4-H electric clubs in Bruce, Dundas, Huron, Haldimand, Lambton, Peel, Prince Edward and Renfrew counties and the Thunder Bay District. Last year, 151 people between the ages of 16 and 21 successfully completed the one-year course.

Emphasis is on the application of electricity on the farm but safety and economy are also stressed. Members are taught how to read watt-hour meters and they keep records on the power consumption of an apparatus or appliance in their homes. Electric terminology is explained and discussions are held on the selection, installation and care of electric motors. Visits are made to Ontario Hydro generating stations and the members learn about the electric supply system in the province.

Each year, the clubs compete with each other at competitions in Guelph. Last October, the Renfrew County group captured the Ontario Hydro Trophy for their knowledge of electricity.

Anne Algire and Bruce Garlough, from Williamsburg, representing the Dundas County club, took top honors in the demonstration section with a talk stressing the importance of the human element in the safe and adequate electric wiring of farms. □



# BLAME IT ON

**by BOB MORROW**

**Precipitation and evaporation are mainly responsible for major variations in the levels of the Great Lakes System.**

*"Little drops of water,*
*little grains of sand,*
*Make the mighty ocean*
*and the pleasant land."*

*— Little Things (1845)*

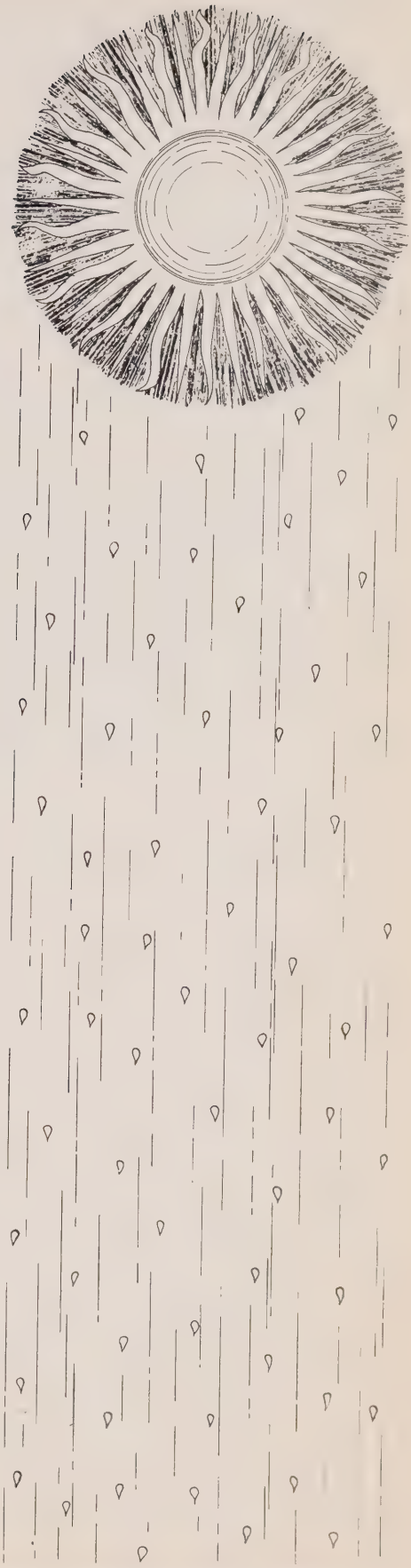
Everyone's talking about low-water levels nowadays but consider these points:

- Nearly a million gallons of water a second flow through Niagara River power stations or over the Falls every month.
- In one day the St. Lawrence River almost enough water to supply every cipality in Ontario for one year.
- The Great Lakes cover an area of square miles, nearly as large as the M Provinces plus Newfoundland.

When there appears to be "water, everywhere" — as Coleridge wrote in Ancient Mariner"' — why speak of di

The supreme irony is that a severe shortage does exist. There's a water fa a land of plenty.

In drought-stricken Prince E County, near Picton, a farmer recently a new well to a depth of 104 feet bu



# THE WEATHER

Many farmers in the area have been buy-
water by the tank truck from Picton PUC.
Oxford County, near Woodstock, the
rio Water Resources Commission drilled
t well in 1963. Nothing was pumped out,
etween May and October the water level
four feet.

ecipitation in 1963 in the Chatham area
the lowest in 45 years and second lowest
) years.

any other indications of drought could
ited on Southern Ontario farms which
been particularly hard hit. But the water
age has had no less dramatic effects on
activities besides farming.

Indeed, the shortage has driven home the importance of water in the daily lives of 70 million people who live in the area bordering the Great Lakes and St. Lawrence basin, which contains the greatest concentration of industry in the world. More than 60 per cent of Canadians and about 35 per cent of the U.S. population live within the 678,000-square-mile area of this drainage system.

To some degree the decline in Great Lakes levels, which began more than three years ago, has involved nearly everyone through its effects on shipping, fishing, recreation, industry and sanitation. In some municipalities, water intakes have had to be extended to

compensate for the drop in lake levels.

Nowhere is the problem of lower water levels shown more starkly than in the production of hydro-electric power.

In the last two years the output of Ontario Hydro's Niagara and St. Lawrence generating stations alone has dropped 8 billion kilowatt-hours below the amount which would have been produced with normal river flows. This loss in electric energy, a direct result of low water levels, exceeds the consumption of electricity by the entire Metropolitan Toronto area for one year.

Fortunately, coal-burning power stations and interconnections with utilities outside Ontario enabled Hydro to meet power demands. Some 3.2 million tons of coal costing more than $28 million were required to replace Hydro's loss in hydro-electric production during 1963 and 1964 on the two major rivers.

Many are asking why water levels have dropped to record lows. Experts have most of the answers to this question — more difficult is finding a solution to this highly complex problem which affects two Canadian provinces, eight American states bordering the Great Lakes system, and many governmental agencies.

Authorities agree that the factor mainly responsible for low water levels has been a shortage of rain and snow in the Great Lakes basin over a three-and-a-half-year period. During this time, precipitation has ranged between 8 and 12 inches below normal over most sections of the drainage area. Although about normal last year, precipitation declined about 16 per cent below the 60-year average in 1963 and nearly as much in 1962.

Over the vast watershed, that's a whopping water deficit. It's estimated every inch of rain equals 14.5 million gallons a square mile.

Another factor compounding the water shortage is evaporation. With more sunny days than usual, evaporation of lake water greatly increases.

Records show that the "ups and downs" of the Great Lakes have followed no set pattern over the past 100 years, but varied with successive years of light or heavy rainfall which cannot be forecast. The last peak high water year was 1952. But seasonal changes do occur in lake levels, rising during the spring runoff and falling during the summer and fall.

Another factor, known as crustal movement, has a long term influence on Great Lakes levels. The earth's crust, pressed down by glaciers several thousand years ago, is gradually recovering but at a faster rate to the northeast than in the southwest. This phenomenon causes the water level to fall on the shoreline east or north of a lake outlet like the St. Clair River and rise to the south and west. For example, the level is falling in relation to land by some 10 inches every 100 years in Georgian Bay but it's rising only three inches a century around Chicago.

The major problem remains: what can be done about low-water levels? There are no simple solutions — unless nature provides Noah's 40 days and nights of rain.

The gravity of the situation was pointed up in 1964 by three major meetings of representatives of states and provinces bordering the Great Lakes and the St. Lawrence River, along with federal officials from the United States and Canada. Reflecting Ontario Hydro's concern, representatives of the Commission contributed to these discussions.

Remedial measures were discussed and, as a result, the whole problem was referred to a House of Commons committee and the International Joint Commission, which by treaty has jurisdiction over Canadian and United States boundary waters.

Recently a new body, the International Great Lakes Levels Board, was formed by the IJC to study possible further regulation of Great Lakes levels. (Only two lakes — Superior and Ontario — are now controlled.)

Among proposals being advanced are major diversions of rivers into the Great Lakes. The main difficulty with such projects, aside from economics and red tape, is the risk of serious flooding during prolonged periods of above normal precipitation.

The science of forecasting has not yet been developed to the stage where high water levels can be predicted the necessary two or three years in advance. If heavy rain occurred after a large volume of water was diverted into the lakes, it would be too late to turn off the tap.

A recent Federal Government report says diversions, dredging and the operation of control structures have small effects on Great Lakes levels compared with rain, snow and evaporation. The volume of water diverted into Lake Superior by Ontario Hydro's Long Lac and Ogoki projects, for example, roughly equals three-tenths of an inch of rain a year over the Michigan-Huron basin.

Cloud seeding as a means of increasing precipitation over the Great Lakes watershed is also being considered and some claim the cost of such a program would be small in relation to the benefits. But it would be difficult to establish conclusively whether or not any increase in precipitation was a result of the program or of natural causes.

Tremendous forces of nature are arrayed against man in his quest for solutions. The stakes are high because, it's estimated, every resident of Ontario requires 100 gallons of water a day. And demand for this vital resource will grow as population expands. More and more people are saying that a better understanding of the low-water problem, combined with concerted efforts to find solutions, are necessary all around the Great Lakes. □

# THE GREAT LAKES DRAINAG BASINS




## GENERAL DATA

| | SUPERIOR | MICHIGAN-HURON | ERIE | ONTARIO |
|---|---|---|---|---|
| DRAINAGE BASIN AREA (sq. mi.) | 80,900 | 147,880 | 34,680 | 34,630 |
| WATER SURFACE AREA (sq. mi.) | 31,820 | 45,870 | 9,940 | 7,540 |
| MONTHLY MEAN ELEVATION (I.G.L.D. 1955) 1860-1963 — MAXIMUM | 602.06 (1876) | 581.94 (1886) | 572.76 (1952) | 248.06 (1952) |
| MONTHLY MEAN ELEVATION (I.G.L.D. 1955) 1860-1963 — MINIMUM | 598.23 (1926) | 575.61 (1926) | 567.49 (1936) | 241.45 (1934) |
| MONTHLY MEAN ELEVATION (I.G.L.D. 1955) 1860-1963 — AVERAGE | 600.37 | 577.87 | 570.39 | 244.79 |
| AVERAGE DISCHARGE 1860-1963 (c.f.s.) | 74,200 | 188,000 | 201,000 | 239,000 |
| AVERAGE ANNUAL PRECIPITATION 1900-1963 (inches) | 29.29 | 31.07 | 33.69 | 34.19 |

# ALONG HYDRO LINES

## W. Roy Harmer dies



W. Roy Harmer, director of Ontario Hydro's Sales Division, died February 5, in Toronto General Hospital after a short illness. He was 58.

Mr. Harmer, who had been associated with Hydro since 1939, co-ordinated the Commission's sales promotion program throughout the province.

Paying tribute to him as a colleague and friend, D. J. Gordon, assistant general manager—Marketing, said: "Roy's enthusiasm, generosity, warmth and widespread interests attracted people to him from within and outside the Commission. He was widely known and respected by the Hydro family and the electrical industry, and his untimely death was a great loss to all of us."

A native of Fullarton, Ontario, near Stratford, Mr. Harmer graduated from the University of Toronto in 1930. He worked for Canadian General Electric in Peterborough and Toronto before joining Hydro in 1939 as industrial engineer in the former Sales Promotion Department.

During the Second World War, Mr. Harmer served as Ontario Co-ordinator for the Public Utilities Wartime Workshop Board. He was secretary-treasurer of the Association of Municipal Electrical Utilities from 1944 until his appointment as assistant director of Hydro's Consumer Service Division in 1947.

In 1948 Mr. Harmer transferred to Hydro's Frequency Standardization Division, returning to his consumer service post in 1956.

Mr. Harmer became manager of Sales Promotion in 1958 and was appointed director when this department became a separate division the following year.

Mr. Harmer was a member of the Association of Professional Engineers; Institute of Electrical and Electronic Engineers; and the Electric Club of Toronto.

He is survived by his wife, Wilma; and three sons, Jack, in Lagos, Nigeria; Robert, of Ottawa, and Lee, at home. □

## Civic night at Toronto

Underground distribution and progress in the field of electric heating were among the highlights of a report presented by Bertram Merson, retiring chairman of the Toronto Hydro-Electric System, at the annual Civic Night get-together. He called the event, inaugurated about seven years ago, "a meeting of the people who make Toronto tick," and he said it gave Hydro an opportunity of presenting an informal report to municipal officials of the City, Leaside and Metropolitan Toronto.

"For the past few years, and rightly so, there has been an increasing public demand for the abolition of overhead wires and the removal of sightly wooden poles," Mr. Merson said. Since 1955, he said, over 7,( wooden poles had been removed and 800 miles of cable had been pla underground in a continuing program.

Outlining promotional results, Mr. Merson acknowledged that no gr number of Toronto homes were heated electrically, owing to the buil nature of the area served, but he noted considerable success with lar buildings. "We now serve 19 commercial concerns using nothing but e trical energy for all their operations", he said. There were three la all-electric office buildings and 14 apartment buildings representing apartments.

On the subject of rates, he said these were still below the 1937 level t he was pleased to report that there would be no increase during 1965.



*Enjoying the Civic Night get-together, these are among the people "who make Toronto tick". From left are: John McMechan, Mrs. Philip Givens, Mayor Givens, Controller Margaret Campbell, Bert Merson.*

## Going up in smoke



In a significant departure from the usual mortgage-burning ceremonies Cache Bay Hydro-Electric Commission used an electric barbecue start burn their paid-off debentures. Taking part in the ceremony are: left to r Dalton Pigeau, commissioner, Stewart Boyce, chairman, David Stewart, s tary-manager, and Mayor John Arcand. Chairman Boyce called it a h occasion which 15 years ago, he did not think possible. "At that time quipped, "the Hydro rates were so high that people in Cache Bay put lights on only long enough to find their lanterns". Now they enjoy which are among the lowest in Ontario, he said.

## Hydro man heads engineers



John H. Waghorne, engineer-in-charge of Ontario Hydro's Electrical Research Department, was recently elected president of the 22,000-member Association of Professional Engineers of Ontario.

At Hydro, Mr. Waghorne heads a staff of 120 engineers and technicians who carry out electrical testing and development of systems and special equipment. He has been with Hydro's Research Division since his graduation from Queen's University in 1940, except for nearly three years spent as a lecturer at the University of Alberta's electrical engineering depar during World War II.

Mr. Waghorne has been associated with the APEO's executive c since 1954 and was active in the establishment of the engineering t cian's special committee in 1956. He has continued as an active meml the Certification Board for engineering technologists and technicians 1957 and was chairman from 1961 to 1963.

## Plan EHV interconnection

Ontario Hydro and two Michigan utilities which operate as a power po seeking permission to build an extra high voltage electrical interconn across the international boundary about 18 miles south of Sarnia.

The link — the third between Ontario and Michigan — would facilit increased two-way power flow when required to ensure operating ecor and high standards of service for consumers on both sides of the bor

If approved by governmental authorities in Ottawa and Washingto interconnection will span the St. Clair River between Detroit Edisor Clair Power Plant and a point about three miles south of Hydro's new 2 000-kilowatt Lambton Generating Station.

e tie-line, scheduled for completion by December 1, 1966, would ate initially at 230,000 volts. But eventually power will be stepped up 45,000 volts to provide about double the power-carrying capacity.

st, estimated at $2,000,000, will be shared 50-50 by Ontario Hydro and Michigan utilities, Detroit Edison and Consumers Power companies.

the Canadian side, the project includes construction of a 320-foot tower at the river crossing and an extra high voltage transmission line e Lambton station near Courtright. □

# TTERS TO THE EDITOR

Sir:

ease accept my sincere congratulations for the excellent December of Ontario Hydro News. The beautiful color photo on the cover and the esting article on Pipe Organs were especially noteworthy.

organs are my number one hobby, with particular reference to the tre Pipe Organ, I thought that perhaps you might be interested in a few s concerning the latter. From an electrical point of view, the United tre Organ is much more intriguing than the conventional Church instru- . Mr. Wagner quite correctly credits Robert Hope-Jones with many of nprovements found in all organs to-day, but he is also known as the r of the Theatre Organ. . . . When Hope-Jones came to Wurlitzer in the famous "Wurlitzer Hope-Jones Unit Orchestra" was built for res for 30 years following. Their original purpose was of course the npaniment of silent films, in which respect they were organ, orchestra ound effects machines. Some of the effects possible were Bass Drum, Drum, Tom-Toms, Chinese Gong, Sand Block, Surf, Boat Whistle, Auto Bird Whistles, Tambourine, Castanets, etc. . . .

ile most of the Theatre Organs have now been removed to new homes ivate residences, public halls and churches, there is a decided trend d their revival in the better theatres. Radio City Music Hall in New has the largest Wurlitzer with twin consoles, which is played every day. deon-Carlton in Toronto has recently moved the console of their Hill- -Lane Theatre Organ to an elevator in the centre of the stage, and use rgan each week-end. . . .

e Association of Theatre Organ Enthusiasts, formerly American, is now national, with over 2,000 members. They are dedicated to the preser- n of the Theatre Organ tradition, and a better understanding of the ument and its music. . . .

H. C. Blakely, manager,
Picton Utilities Commission

## nvention time

king the countless details that make conventions click are James Ham- , president of the Association of Municipal Electrical Utilities, left, and McMechan, president of the Ontario Municipal Electric Association. are getting ready for the annual meeting of the two associations, to be at the Royal York Hotel, Toronto, February 28 to March 3.

th the theme "The Magic of Electricity," the 56th annual conven- will feature an interesting and informative program for an expected delegates. Keynote speakers at the Tuesday and Wednesday luncheons r. Carl S. Winters, General Motors Corporation, and Arnold Edinborough, of "Saturday Night."

tario Hydro Chairman W. Ross Strike will address the gathering on Tuesday. Monday's feature speakers on the AMEU program include J. M. Hambley, general manager of Ontario Hydro, whose talk is entitled "A Good Hard Look"; and H. J. Sissons, assistant general manager — Services. His talk is called "We Are In The Coal Business In A Big Way."

The ladies' program features visits to the newest shopping areas in Toronto and the musical "One Hundred and Ten in the Shade," at the O'Keefe Centre. A luncheon at the Franz Josef Room and an invitation tea at the Granite Club are other attractions in store for the ladies. □



## Wellesley Hydro veteran retires



Cecil Barbour, recently retired secretary-treasurer of Wellesley Hydro, was honored by village citizens for 32 years of service to the utility. Councillor Louis Mohr, left, of the Wellesley Hydro System, presents him with a cheque as Mrs. Barbour looks on.

Speaking at a retirement get-together, Reeve Howard Doering said, "You have given your village faithful and honorable service. Thirty-two years without a complaint is something of a record." Greetings were also extended in a letter by Ontario Hydro Chairman W. Ross Strike. In attendance were former village Hydro officials, representatives of local organizations and Ontario Hydro representatives from Kitchener and Hamilton. □

# MUNICIPAL BRIEFS

**The fast service** provided by Brockville PUC on Christmas Eve was highly praised by J. D. Millar, Ontario's Deputy Minister of Public Works. Mr. Millar was attending a family reunion in Brockville when the master fuses in the electrical system blew out. Electrician Robert Galna, a PUC staff member on emergency duty set things right. In his letter of thanks to the PUC, Mr. Millar said, "The general public, enjoying Christmas Eve at home, sometimes forgets that many thousands of men are giving up their holiday season to look after the needs of others."

**Newmarket PUC** has subscribed for the supplementary benefits of the Municipal Hydro-Electric Pension and Insurance Plan.

**Toronto Hydro-Electric System** plans to double the capacity of its $3,000,000 Simcoe Street steam heating plant during 1965-66. The plant was officially opened last October and is presently supplying steam to about 30 buildings.

**Philip Garlough** has been appointed consumer service and sales engineer of Ontario Hydro's Northeastern Region, succeeding A. B. Hayman who is now regional manager. Mr. Garlough had been with the Consumer Service Division in Niagara Falls, Ottawa, Belleville and Toronto prior to his appointment.

**D. H. Cliff,** municipal service superintendent at Ontario Hydro's head office, has been appointed consumer service superintendent for the Western Region.

**Two Windsor Utility Commission** employees and a policeman were recently credited with the rescue of five people from a blazing house. John Delcol and Jerry Van MacKelberg saw smoke pouring from the house and smashed a side window to enter the building. With the help of a policeman, the men led five people from the inferno. An onlooker said, "If it hadn't been for those three men, the occupants would surely have perished."

**Belleville Utilities Commission** has purchased a site for a new service center which will be constructed this year.

**William Boddy,** a commissioner of the Oshawa PUC for 28 years, recently retired. Mr. Boddy was chairman of the commission in 1939, 1940, 1942, 1959 and 1960. Two years ago he was vice-president of District 1, of the

OMEA. Mr. Boddy was employed by Robson Leather Company in Oshawa for 57 years until his retirement.

**Harry Nuttall,** former chairman of Tavistock PUC, was presented with an oil painting in tribute to his 14 years with the commission. Mr. Nuttall, who had been chairman since 1958, is now a member of Tavistock council.

**John Rousom,** formerly engineer with Galt PUC, has been appointed manager of Woodstock PUC. He has been replaced at Galt by C. E. Ireland, former consumer service supervisor with Ontario Hydro's Western Region.

**Herbert Robertson,** former Barrie mayor and chairman of the Barrie PUC from 1946 until his retirement in 1958, died last month. Mr. Robertson, who was nearly 90 years old, served as an ex-officio member of the commission from 1939 to 1941 and returned as an elected commissioner in 1945. Active with District 2 of the OMEA for many years, he was president in 1953 and 1954. He was the recipient of a long service award at the OMEA convention in 1946.

**Charles Edward "Teddy" Drew,** a commissioner for 11 years and chairman of the Port Credit Public Utilities Commission in 1964, died last month. He had been an active delegate at OMEA meetings.

**Ted Powers,** formerly with Chatham PUC and now sales supervisor of Woodstock PUC, was the player-coach who recently guided the Ontario Hockey Association Senior All-Star team to a 5 - 3 victory over the touring Czechoslovakia Nationals in London, Ontario. In a London Free Press report of the game, Mr. Powers rated his team better than any Canadian team sent to tour Europe in the past. □

## Chief engineer appointed



Appointment of Harold A. Smith, 46, as Ontario Hydro's chief engineer was announced recently by General Manager J. M. Hambley.

Mr. Smith, who has been prominent in Canada's nuclear power program, was appointed following the retirement of I. K. Sitzer, deputy general manager, on December 31. Mr. Sitzer served with Hydro for 38 years.

As chief engineer, Mr. Smith will be responsible to the general manager for the work of Hydro's Operations, Engineering, Construction, System Planning and Research divisions, which, in recent years, have become increasingly interdependent.

A native of Lucknow, Ontario, Mr. Smith joined Hydro's System Planning Section in 1940 upon graduation in electrical engineering from Queen's University. From 1943 to 1945 he served with distinction in radar development work with the Royal Canadian Navy and was awarded the M.B.E.

Since the war, Mr. Smith has held a number of senior engineering positions. He has been assistant general manager—engineering since 1957. He also served in Chalk River as project co-ordinator of a team carrying out joint studies with Atomic Energy of Canada Limited on the feasibility of generating power from nuclear reactors, and later as director of the nuclear power project. He was manager of the Nuclear Power Plant Division of AECL from February, 1958, to December, 1961.

Mr. Smith is a member of the Association of Professional Engineers of Ontario, and of the Institute of Electrical and Electronic Engineers. □

## Canada's power to triple by 1980

The addition of 17 million kilowatts of new generating capacity by the nation's electrical utilities within the next decade was termed "an era of unprecedented expansion" by J. M. Hambley, president of the Canadian Electrical Association and General Manager of Ontario Hydro.

Speaking to the CEA Eastern Zone annual meeting in Toronto last month, Mr. Hambley predicted that the country's electrical utilities will be producing 75 million kilowatts of electric power by 1980 — almost three times today's capacity of about 26 million killowatts.

Representatives of public and private utilities in Canada, as well as the electrical manufacturing industry, are members of the CEA. The association celebrates its 75th anniversary this year.

Mr. Hambley said of the 17 million kilowatts in electrical capacity now under construction or in the planning stages, one third will come from the Manicouagan-Outardes complex in Quebec. Another 2.3 million kilowatts will be developed on the Peace River project in British Columbia, and Ontario will add over five million kilowatts.

For Ontario Hydro, Mr. Hambley forecast 3.2 million kilowatts of nuclear capacity on its system by 1975.

"A three-pronged development of power resources — hydraulic, coal-fired thermal and nuclear — has created a beneficial situation for the electri manufacturing industry in Canada," Mr. Hambley added. "This is particula true since Canadian manufacturers are successfully meeting the challer of offshore competition for the large thermal generating and auxili equipment."

## Hydro engineer honored

In recognition of his technical contributions and leadership in the field illumination, G. E. Davidson of Ontario Hydro's Electrical Research Dep ment, has been elected a Fellow of the Illuminating Engineering Society Great Britain. Mr. Davidson, who is also a Fellow of the American Illuminat Engineering Society, is the first Canadian-trained illumination engineer to so honored.

## Bertram Merson retires



Bertram Merson, 76, chairman of the largest municipally owned electrical utility in Canada for the past 12 years and a commissioner since 1946, has resigned.

His resignation from the Toronto Hydro-Electric System, effective January 31, ends a career which has influenced the conduct of Hydro affairs throughout the province. Concerned with the welfare of public power beyond the confines of his own utility, Mr. Merson served the Ontario Municipal Electric Association for many years and in several capacities including the presid which he held in 1958 and 1959.

John McMechan succeeds Mr. Merson as chairman. A commissioner s 1953, Mr. McMechan is president of the OMEA.

Frederick G. Gardiner, former Metropolitan Toronto chairman, has appointed to fill the vacancy on the three-man Toronto Hydro commis left by Mr. Merson's retirement. The mayor is the third member.

In accepting Mr. Merson's resignation, Mayor Philip Givens said that retiring chairman had made a tremendous contribution to Hydro in Tor and that he deserved a chance to relax. He felt that this might be the w course in the light of Mr. Merson's indifferent health and the stren labor negotiations presently facing Toronto Hydro.

Prior to his appointment as a Hydro commissioner, Mr. Merson had se with the Toronto transportation system and the civic administration for years. He was labor adviser to the Progressive Conservative Party at time of his Hydro appointment in 1946.

Active on many OMEA committees, Mr. Merson was perhaps best k for his work with the Municipal Hydro-Electric Pension and Insurance of which he has been secretary for many years. He also contributed t work of the Resolutions Committee on several occasions and his co often prevailed at these vital sessions conducted by the association a district and provincial level.

In an interview following his resignation, Mr. Merson reaffirmed his in public enterprise and expressed the hope that Hydro in Ontario remain free of political interference. He had a good word for the rel ship which had always existed between Toronto Hydro and municipal c — a record of non-interference which he thought would be diffic duplicate.

Mr. Merson credited "any success I may have enjoyed" to the co-ope attitude of Loftus Reid, former chairman, and John McMechan, his mission associate in more recent years. Of the staff he had this to say: may be 1,500 people as good — but there are none better."

## December energy production

Primary energy provided by Ontario Hydro in December, 196 totalled 3.82 billion kilowatt-hours, an increase of 6.7 per cent ov the same month a year ago.

For the 12 months of 1964, the total is 40.63 billion kilowat hours, up 7.9 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand in D cember was 3.48 billion kilowatt-hours, 1.0 per cent more than t previous month.

The seasonally adjusted total for December represents 41. billion kilowatt-hours at annual rates. This is 299.9 per cent of t energy demand in 1949.

# OFF THE WIRES



It never gets too cold for electricity as the esidents of one section of Dawson City can stify. Sheltered behind a high hill, the settlement receives no direct sunlight in mid-winter nd although the temperature did not get above 0 below zero for more than a month recently, rvices functioned surprisingly well. Some water pes froze, of course, and propane gas used for ooking and heating liquified in the extreme cold. esidents met the latter problem by heating tanks ith high-wattage light bulbs and electric pads. ower bills are not the piddling affairs we are sed to in Ontario. One small home, according to CP story, received a bill for $85 for December.

It's time once again to clear our files of items nding to confirm the versatility of electricity in e service of man. Here's one calling attention to me research being undertaken by General Elec- ic which should go over with a bang. It's a tech- que for generating electrical "explosions" hich they claim could reduce the cost of ex- oring for petroleum.

On the farm front, a Department of Agriculture ientist has developed a method of increasing e proportion of lean meat in pigs by passing a ild electric current through the live animals. It as found that electrical stimulation increased e size of the muscles by as much as 20 per nt in animals which had been given a 20-minute dose" daily for several weeks.

We suspect that old-time hog farmers will go ong with the scientist when he acknowledges at the technique is not yet ready for general e.

And in Sussex, England, a nurseryman has oved that electricity beats manure in stimu- ing plant growth. He has doubled the growth of ttuce and tomatoes by passing an electric cur- nt through the plants and, as a result, the Elec- cal Research Association station at Reading is w carrying out a series of shocking experi- nts. Under the influence of electricity, tomato ants have been jolted into yielding up to 34 unds each.

Closer to home, in the Niagara Peninsula, an ectronic cherry sorter has been put to work cking through almost a ton of cherries an hour. ying a cherry with a bruise or other defect, the achine kicks it out of a suction cup and into the scard.

Equally mind-boggling is the development of a y new device combining the virtues of transis- rs and vacuum tubes announced by Radio Cor- ration of America. It could bring about high- eed, portable computers running on batteries, e makers contend.

And if we still haven't established a strong se for the versatility of electricity, how about e family of eight in Ottawa who recently escaped m the top floor of their burning home by sliding wn an electric extension cord. Or there is the proposal made by a delegate to a recent symposium of Canadian architects and engineers on indoor environment. He suggested that the ultimate in climate control would be "a rectal thermometer" (presumably electrically operated), which would enable the individual to control the climate in his immediate area "without regard for his neighbors".

■ And while we have the files out, we might as well get rid of those tidbits having to do with animal shennanigans and the supply of power.

From the North Bay Daily Nugget comes news of a mixed-up wolf who has taken exception to the electric supply cables at the Jack Garland Airport and spends his time attacking them. The airport manager reports that the wolf makes sneak attacks on heavy braided copper cable and chews right through it — with disastrous effects on the power supply — but not on the wolf.

Then there was the case of the beaver colony in the Upsala area of Northwestern Ontario which, apparently, was suffering from the same type of mental disorder afflicting the wolf. These busy little beasts chewed up electric cable buried in muskeg, causing a power outage and damage estimated at $6,000. Concensus is that the beavers either liked the taste of the plastic insulation or didn't like where it was buried.

And a moose caused a six hour interruption to Ontario Hydro's 69 kv Ear Falls transmission line in the Northwestern Region. Not one to be trifled with, the big animal became entangled in a guy wire and his subsequent antics snapped off the top of the wooden pole.

The last straw, figuratively speaking, occured very recently when a pair of eagles built a nest on a steel transmission line tower near Wallaceburg. Broom-handle-sized branches comprising the nest caused a 21-minute power interruption when they contacted the 115,000-volt line.

■ Absent minded professors are an accepted institution but forgetful doctors are a different kettle of fish — particularly when they forget to remove wrenches, blow torches, hammers and other tools of the trade from the innards of patients laid open for inspecion.

But their memory problems may be on the way out. Radiation, no stranger to modern medicine, may be the answer. At present, the only safeguard is to take instrument inventory before and after the operation, a time consuming proposition at best, or to x-ray the patient after he has been stitched up. With mildly radioactive instruments there is no waiting.

The system has been tested by its inventor, Dr. Joseph Moody, in several operations at St. Joseph's General Hospital, Elliot Lake, with a nuclear assist by Dr. R. H. Tomlinson and David Whiteford of McMaster University, under licence of the Department of National Health and Welfare.

Bits of radio-active cobalt-uranium alloy were embedded in instruments. Tiny slugs, encased in rubber, were stitched into sponges. Before re closing the incision, a detection device was passed over the patient, taking about 10 to 15 seconds. Dr. Moody reported it did not interfere with routine surgical procedures.

Results are being assessed, but it seems to have worked and the cost of the equipment involved is estimated at $2,000-$3,000.

In addition to supplying a goodly portion of the future power which will be used by the people of Ontario to cook their toast, wash their clothes and turn their machines, nuclear energy seems likely to eliminate that lumpy look some citizens have acquired after a session on the operating table.

■ Office parties on this side of the Atlantic are pretty tame affairs if we are to judge by the action taken just before Christmas by the Central Electricity Generating Board of Great Britain. Officials of that august body directed its many branch offices to appoint patrols whose unpleasant duty it would be to "break up necking" at the various get-togethers. According to an AP dispatch, the patrols were instructed "to discourage cuddling and clear dark corridors of amorous couples".

The Gas Board, more concerned with efficiency than morals, bemoaned the effect of hangovers on work output. A journal issued by the board suggested five ways to ease the morning-after blues. They included: a pint of milk, an ounce of olive oil, a large steak, a plateful of tripe or a raw onion.

More surprising to a land such as ours, where office parties have long been regarded with suspicion and anything more potent than a spot of tea and a ginger snap is decried with some vehemence, is the attitude of the English press. Blasted The Sun, of London: "Somebody always wants to knock the fun out of Christmas. This year the Scrooges are cracking down on staff parties."

■ Michigan Municipal Utilities Association "Newsletter" cites several examples of what it calls "far, far-out Federal extravagance" and in reading down the list there is indeed food for thought. Not so bad is the $15,200 slated for a study of society and demography in ancient Babylonia, or the $65,400 to be spent in examining the behaviour and ecology of the wandering albatross — it's the $17,500 "for the modification of alcohol preference in rats" that gets us.

Just what is involved here is not clear, but it seems to suggest that the rat population of the United States leaves something to be desired where its drinking habits are concerned. If an attempt is to be made to wean the rodents away from alcohol entirely, well and good, but if they are simply catering to some exotic preference on the part of these pests, then it's a bit much. If those U.S. rats can't find something to their taste among the many alcoholic beverages now available, we say—let them lump it. □



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# CONVENTION ISSUE

MARCH, 1965

# ONTARIO HYDRO NEWS

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THE COVER




A gavel, a lecturn and a jug of water are the mundane objects making up the still life on this month's cover—but they stand for the men and the meetings which have so important a bearing on the conduct of Hydro affairs in Ontario. LVI is our symbol for the 56th Joint Annual Convention of the OMEA-AMEU—highlights of which will be found on those pages where the numerals appear.

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John McMechan, President, OMEA
J. W. Hammond, President, AMEU
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OMEA

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## A UNITED APPROACH

In a strong show of solidarity, more than a thousand delegates representing the policy making, technical and administrative functions of the publicly-owned electrical utilities of the province met recently in Toronto with a single purpose—a collective approach to their mutual problems.

Subjects ranging from labor relations to truck purchasing, and from pensions to home heating were featured on the agenda of the 56th Joint Annual Meeting of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities. Registration totalled 1369 — concrete evidence that the term "Hydro Family" is more than a platitude.

Tracing their origins back to the power unions, which were formed in Ontario just after the turn of the century to champion the cause of public power, both associations showed clearly at this convention how closely and effectively they have pursued their constitutional objectives.

The OMEA, composed at present of Hydro commissioners (mostly elected) from 33[illegible] municipalities, is dedicated, among other things, to securing legislation designed to promote the welfare of the utilities, and to oppose and prevent encroachment on the constitutional rights of the municipalities. That these objectives have not been lost sight of is demonstrated in the sessions on resolutions recounted in our convention report.

Other sections of the report substantiate the association's original intention of encouraging standardization of equipment and procedures.

The AMEU is made up of managers and senior staff of the various utilities and presently represents 285 municipalities. Being largely a technical organization, its principle aim is to provide assistance to its members and education in engineering and office procedures. It, too, has succeeded in pursuing its original goal and the two groups have been immensely successful in promoting the successful operation of the Hydro partnership.

This is borne out in the highlights of the joint convention which are on the following pages.

# TY-SIXTH JOINT ANNUAL MEETING CONVENES



**OMEA EXECUTIVE**

Newly-elected OMEA officers, front row, left to right: F. G. Tigwell, Point Edward; L. A. Waddell, Lindsay; D. P. Cliff, Dundas, secretary; Dr. R. H. Hay, Kingston, newly-elected president; J. D. Phillips, Schreiber; Dr. J. D. Fleming, Dundas, and G. D. Sills, Seaforth. Back row: W. C. Pearson, Strathroy; H. F. Baldwin, Oshawa; J. R. Philips, Brockville; A. J. Marshall, Fort Frances; H. F. Keffer, Sioux Lookout; L. W. Smith, Tillsonburg; W. J. Fisher, New Toronto; and M. J. Brian, Windsor. Dr. J. E. Wilson, Barrie, first vice-president, was not present.



**AMEU EXECUTIVE**

Members of the 1965 AMEU executive, front row, left to right: H. E. Brownhill, Niagara Falls; J. F. Anderson, Leamington; E. F. Burbank, Toronto; Stanley Webster, Tillsonburg, new president; J. W. Hammond, Hamilton, immediate past president; Bert Fleming, Toronto Township and C. V. MacLachlan, Ingersoll. Back row: W. R. Mathieson, manager and secretary-treasurer; J. P. Dawson, Dunnville; F. L. G. Askwith, Ottawa; J. K. Fee, Kingston; M. H. Kelly, Atikokan Township; Stewart Holt, Midland and R. M. Senyshen, Kitchener.



## DR. R. H. HAY
## OMEA President

If one were looking for "firsts" in the OMEA's 56-year history, he would need look no farther than the tall, distinguished man from Kingston who was elected president at the recent convention.

Dr. Robert H. Hay, a physicist, hails originally from Calgary and once served as principal of a four-room village school in Alberta. While getting his university education, he operated crusher house machinery at a Kirkland Lake mine during one vacation. Another summer he spent as a technician in the Oceanographic Institute in Woods Hole, Mass.

He earned his M.Sc. degree in engineering physics from Queen's University, in 1938, and for a time served as physics instructor. His students included a young man named Harold Smith, who recently became Ontario Hydro's chief engineer.

His doctorate work at Columbia (on the measurement of nuclear magnetic moments by the molecular beam method) was interrupted for three years while he instructed RCAF radar mechanics at Queen's. He gained his Ph.D. in physics from Columbia in 1946.

Since 1945 he has headed the Physics Division of Aluminium Laboratories Ltd., Kingston, a subsidiary of the Aluminum Company of Canada.

Dr. Hay was elected to Kingston PUC in December, 1952, and has played a leading role over the years in the upgrading and rapid expansion of the city's electrical services.

"It was two or three years before I could find time for OMEA work," he said in an interview. But he was soon elected a director of District No. 1 and then served as 2nd vice-president of that district and as a director of the central body.

Dr. Hay has tended to specialize in OMEA legislative committee work and has been responsible for preparing OMEA briefs to the provincial government. He was among those mainly responsible for producing a recent OMEA booklet on the relationship between Hydro and government.

"I have always supported the Hydro principle," he explains, "but perhaps have been more vocal in my opposition to acts which threaten the Hydro enterprise."

Last year Dr. Hay prepared, on short notice, the OMEA brief to the Provincial Government on the much-criticized recommendations of its select committee. He believes the OMEA must remain alert for future attempts to change the nat the Hydro organization.

As OMEA president, Dr. Hay lists three imp items on the agenda for 1965.

Since a new power costing method is ex to be announced shortly, he anticipates a deal of explanatory work will be necessary will include contact with the "grass roots"

Secondly, he says "we are reaching the where we feel the OMEA needs a permanent tariat to handle day-to-day business." He en a full-time official with a small staff for and publicity work throughout the organiza

And finally, he strongly supports the enumerated by Hydro Chairman W. Ross St his convention address to the OMEA. (Th listed elsewhere in this issue.)

"I think we have to do as much as we measure up to Mr. Strike's checkpoints," h The most important of these, he thought how to improve the load-building programs municipal utilities and their collective "ima

Dr. Hay underlined the challenge to the with these questions: "Is the local commis house in order? Is he really in a position to the criticism implicit in the select comm recommendations?

"I don't think we can be hidebound," h "We have to be flexible to meet the chang may be forthcoming in municipal governme number of cities across the province."

Dr. Hay said the problem was most "ac Metro Toronto, where amalgamation of municipalities has been suggested. But th of change were also blowing in such cen Kingston and Ottawa and in many other mu ties where urban complexes continue to s rural areas.

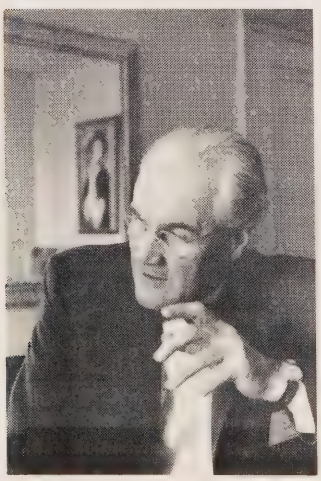
The implications for Hydro of proposed in municipal government are not apparent. clear is that the OMEA has elected a champion of Hydro to its presidency.

## STANLEY WEBSTER
## AMEU President

The citizens of Tillsonburg still talk about Stan Webster donned spurs, hard hat an belt and climbed a hydro pole.

For Stan wasn't the usual lineman str restore service after a vicious windstorm

*Dr. R. H. Hay*



*Stanley Webster*



Oxford County town. He was the recently-inted PUC manager who had committed all his -line troops and climbed into the fray himself use he "saw the need."

an's the man elected president of the Associa- of Municipal Electrical Utilities, at the 56th al Convention, and if his record's any indica- the organization has picked a winner.

his election he says:

t is a tremendous honor for a person from a the size of Tillsonburg (population — 6,600) ecome president of the association. . . . It is utstanding event of my electrical career."

an Webster traces that career back to about when he used to visit his dad's steam-electric in the Oxford village of Norwich. Herbert ster sold the plant and distribution system to o and took his family to Woodstock in 1914 Stan was nine years old.

an attended Woodstock public schools, the giate Institute and Business College. He ed for electrical contractors during his sum- vacations and in 1926 he joined Ontario o's rural department at Woodstock.

24, he was appointed rural superintendent of hen new Ingersoll Rural Power District. "When nt there," he said, "there were about 400 omers and the main thing was building lines rve the expanding rural area."

an was transferred to London Rural Power ict in 1936 as assistant manager and took ision courses at the University of Western rio in psychology and mechanical drawing. An- highlight in his career occurred in 1938 he was accepted as a member of the Associa- of Professional Engineers of Ontario.

an Webster was appointed manager of Tillson- PUC in 1944. The move from Ontario Hydro municipality was "quite a change", he recalls, ne enjoyed making the decisions — and tak- ne responsibility for them.

ter moving to Tillsonburg, he became keenly ested in AMEU activities and was appointed to original standards committee. He became man of the Overhead Standards Committee in and remained in this job until the Guide for ead Construction was completed in 1962.

er the years Stan has gained wide experience MEU work as a director, director-at-large, and president last year.

ry active in community affairs, which he con- siders part of a Hydro manager's job in a smaller community, Stan is a past master of St. John's Masonic Lodge, Ingersoll, and past president of Tillsonburg Lions Club. He is also a member of the boards of Tillsonburg and District Hospital and St. John's Anglican Church.

Speaking as AMEU president, Stan says:

"My main aim is to try and get more people involved in AMEU work, particularly from smaller municipalities."

He believes more members from small utilities should take an active part in producing such valuable items as the AMEU guides which have received world-wide recognition.

"We want to get them to work on committees and sub-committees," he said. But he adds frankly, "I don't know how — yet."

Stan Webster expects completion of the AMEU guide for underground wiring will be a highlight of 1965. He says the guide, a result of several years' work by AMEU committees, will save PUC managers and professional staff a great deal of time in studying the subject and expects its publication will give a fillip to underground construction.

Stan believes such AMEU work helps to counter the problem faced by many engineers who find it difficult to keep up with the rapid rate of technological change. By participation, he says, they can keep abreast of new developments.

It sounds as if the pole-climbing utility manager has cut out his own work for himself this year. And you get the impression the new AMEU president would climb a pole again, literally or figuratively, at the drop of a hat. □

## JOHN McMECHAN: "Our public relations need improvement"

The appointment of a full-time official to co-ordinate OMEA affairs was advocated by outgoing president John McMechan, Toronto, in his wind-up address. He cited as reasons for the appointment the expanded interests and activities of OMEA throughout the province, particularly in sales and marketing.

"We must have someone to help co-ordinate the efforts of all the various districts and committees of the association and AMEU," he said. "This will help us to carry out and follow through with the many excellent ideas which are put forward from time to time."

In urging OMEA directors to study the idea, Mr. McMechan emphasized that the appointment of a full-time official would in no way interfere with the local autonomy of commissioners or municipalities.

Mr. McMechan termed 1964 as the year in which municipal utilities were jolted into a re-awakening. Describing the OMEA's prompt reaction to the select committee's recommendation that Hydro commissions be discontinued and their work assumed by committees of council, he declared:

"Perhaps the recommendation was a blessing in disguise. Obviously our public relations need improvement.

"It awoke us to the fact that some men in public life did not know of the contribution Hydro commissioners make to public life or of their services to local municipalities. Perhaps we allowed our public image not so much to deteriorate as to be taken for granted.

"Public relations," he warned, "cannot be mechanized. It's a hand-hoeing, person-to-person job. The 'magic' of public relations lies in your personal contacts with your customers . . . your desire to understand their problems and help them."

In a fitting climax to his speech, Mr. McMechan recommended more uniformity in the policies and practices of the municipal utilities. Reiterating a theme he has expressed throughout the province during his term of office, he declared:

"Under the present system, when customers move from one municipality to another they are confronted with a different set of costs and regulations as far as Hydro is concerned. I would recommend to the incoming Board of Directors that a committee be appointed to study and give leadership in the matter of uniformity." □

## J. W. HAMMOND "There are many problems coming up— but this is good . . . "

When AMEU members do some hard thinking, the effects ripple around the world.

In his address to the association, retiring president James W. Hammond said: Through their advice and guidance to AMEU committees, delegates have influenced the design and method of power distri-

*John McMechan*



*J. W. Hammond*



bution systems in all parts of the world.

"In one of our recent news letters, it was noted that utility managers from West Germany were meeting with one of our AMEU members in one city, while at the same time engineers from New Zealand were meeting an AMEU group in another city.

"These meetings were the result of notices in the international press regarding the work of your committees as processed and published by the AMEU," he added.

Mr. Hammond said the association's "Guides to Municipal Standard Construction" have been accepted internationally.

AMEU members are prominent in their work with the Canadian Coordinating Committee for Electrical Utility Standards and the Canadian Technical Radio Planning Board. They are also sharing responsibility for safety standards with the Canadian Standards Association (CSA).

"It is truly amazing to reflect that the man-hours and brain power required for these studies is entirely voluntary," he said.

"But we have found that volunteering for one of our AMEU assignments has proved to be worthwhile and rewarding, in the sure knowledge that we are making a major contribution in the interest of seeing that Hydro consumers receive the best in efficient, reliable and economical service."

Mr. Hammond said the many problems coming up would prevent members from becoming stagnant or self-satisfied.

Among new fields of interest cited by the speaker were consultations with the Ontario Department of Highways in connection with the coordination of new highway construction and the crossing of overhead or underground power lines.

"We have continuing studies with our utilities to ensure that economies are being built into our construction. We have innumerable experiences to assess and record, the results of which may lead to the saving of property or human life," he said. □

## W. ROSS STRIKE: "We must improve our lines of communication"

Are municipal utility commissioners emphasizing local autonomy at the expense of the continued success of the Hydro enterprise in Ontario?

The question was posed indirectly to AMEU delegates by Ontario Hydro Chairman W Strike in a speech at a joint session of the day convention.

"We must never forget that despite our s form of organization," he said, "we must fu as an integral part of an electrical utility th velops, transmits, and distributes power customers.

"I suggest in all kindness and sincerity Strike told his attentive listeners, "That yo take off that enveloping cloak of semi-aut with which you fend off all invaders. . . . I I also very gently include some managers."

The theme of the Hydro chairman's remarl a plea for improved lines of communicati tween branches of the Hydro enterprise.

"It is only on this basis that we can succe retain our place in the industry and give ou tomers the modern service to which the entitled."

The unique feature of Hydro, with a centr plier producing electricity for more than 35( autonomous municipal utilities, can either source of strength or a fatal weakness, h tinued.

Mr. Strike noted that Quebec and British bia had not followed the Ontario pattern establishing provincial power commission tailing of electricity, in Ontario the job municipal utilities, is the responsibility of tl vincial commission in these provinces.

"In fact, in Quebec some of the few mu ities who now own their systems . . . are to be bought out by the provincial commiss

"I have talked with the chairman of bo vincial commissions and they do not appea enthusiastic about our situation . . . (they) a interested in how we will stand up ge especially in the face of the highly com market."

He said the OMEA, AMEU, and Ontario Hy providing modern and up-to-date tools and ment for local commissioners to do a well-in and efficient job.

"Bluntly, frankly, and obviously — the ef these organizations will be of little avail competence, knowledge and information d get through the communication pipeline



commissions," he went on.
e must improve our lines of communication
en the provincial commission, the OMEA, the
, and local commissions. We are making pro-
in the first three, but are we succeeding as
ould in the fourth?" Mr. Strike asked.
tools are at hand, he said. "The question is:
ou prepared to make full use of them?"
cited uniformity in load building practices,
tion and management efficiency, customer,
and public relations, and staff training as
of the areas in which there was a need for
ntration in communications.
a review of the industry generally, Mr. Strike
that the national survey made by the U.S.
al Power Commission showed there has been
technological advance and breakthrough in
ectrical industry than in any other.
also pointed out that Ontario Hydro has the
st capacity of any single utility on the North
can continent, with the exception of the
ssee Valley Authority, whose heavy loads from
utonium plants of the U.S. Atomic Energy
ission are now being reduced.
Strike said he wanted to impress upon com-
ners, "just as strongly as I can, that you are
ming not only in the big league, but in the
acket.
utilities, both private and public, in the
States as well as Canada, are now firmly
ced that the way to achieve more revenue
sell increasing amounts of electric energy
t just raise rates," he explained.
d-building efforts, including the all-electric
Mr. Strike continued, are aimed directly at
ing customers with the conveniences of mod-
ing at low cost with better service.
e provincial commission can plan and build
g machines and beef-up the transmission
es. These activities may from time to time
n upward pressure on costs, but they can
orbed if we press hard at selling more kilo-
burs to increase diversity of use.
s is the primary role of the municipality,
ch on its own but together within the frame-
f the whole co-operative enterprise, with all
ned and informed personnel, its competence,
skills in every phase of the business," Mr.
said.

The Hydro organization today, Mr. Strike continued, has come of age. It is recognized world wide as an outstanding electrical utility.

But, he said, "our very accomplishments make us vulnerable. We now operate in a highly competitive economy (and) we must bring new skills and greater concentration to the art of co-operation we have developed over the years . . . this means better and more communication between our component parts."

Summing up, the Hydro chairman appealed for the "renewed and unreserved determination of every local commissioner to play his full part in making sure his utility is measuring up . . . to modern utility requirements and is using all the tools available."

This could only be done, he said, by making sure the communication pipeline works to full capacity.

## Checklist for commissioners

In his convention address, Mr. Strike included a checklist to help local commissioners assess their performance.

"If you can answer 'yes' to every question," he told delegates "you go to the head of the class."

Here are the questions:

√ Do you belong to the OMEA and attend regularly both the annual and district meetings and their sessions?

√ Do you take part in the sessions of any of these conventions either vocally or by making up your mind as to agreement or disagreement with the points raised in the speeches, papers and panel discussions?

√ Have you gone back from these meetings to your commissions and put into practice any of the ideas or procedures you heard and agreed with?

√ Have you acted on any OMEA committee, either annual or district? Do you try to dig up information that will help the committee?

√ Do you read Hydro News and Talking Points thoroughly and all other Hydro pamphlets and brochures mailed to you directly or through the local utility office? Do you use this information?

√ Do you deliver speeches in your municipality at every opportunity about your local utility and its function in Ontario Hydro?

√ Do you make sure that any criticism of your utility, either by editorial, or letter to the press, is adequately and promptly answered? Do you do the same with verbal complaints?

√ Have you had any serious discussion in your commission as to how you can improve the image of your local utility and the importance of the commissioner in its function? After the discussion, do you carry out any actual effort?

√ Has your commission discussed meeting with the regional manager to discover how his office can best keep your utility up-to-date on current developments and practice, especially in the load-building field?

√ Do you encourage and support your manager and appropriate staff in both belonging to and participating in the AMEU, and the work of its committees? Do you appreciate the importance of this effort to the efficiency of your utility?

√ Do you encourage and support your staff to take training courses available in the appropriate sectors of the business?

√ Have you a place for load-building on the agenda of your regular monthly meetings including reports and discussion on your current projects and future plans. Do you seek authentic information on what is going on in this field in neighbouring utilities — directly or through regional office representatives? □

## PENSIONS

Amendments to the Municipal Hydro-Electric Pension and Insurance Plan are in the hands of the provincial government for approval.

P. R. Locke, chairman of the pension and insurance committee, told convention delegates.

"We had hoped to present a complete statement of the amendments at this session, but they need government approval before the necessary order-in-council is obtained."

The speaker noted that amendments must conform with the Pension Benefits Act of Ontario and that the plan may require further revision in 1966 to comply with the Canada Pension Plan.

Mr. Locke assured delegates that after the amendments are approved by the government, full information will be provided in booklet form to commissions and utility staffs.

"If we need to explain changes in pension coverage more fully, your committee is prepared to hold district meetings or meetings with individual

*P. R. Locke*



*If a veteran municipal*
*ssioner, Hydro Chairman*
*ss Strike, left, is shown*
*ting long service awards to John*
*d, centre, and Stewart Boyce—*
*ache Bay commissioners.*



commissions," he said.

Delegates were told that since the original pension plan began operating in 1929, a combined surplus of some $15.5 million had accumulated, with a further surplus of $633,000 in the supplementary section.

"These surpluses will be used to increase pension benefits for retired pensioners and present employees on a pro rata basis according to length of service and contribution," Mr. Locke said.

Hydro Chairman W. Ross Strike thanked Mr. Locke and his committee for "the hundreds of man-hours that you have contributed to this complicated matter.

"I am convinced that when the amendments to the pension plan are announced, the bulk of the 8,000 employees affected and their families will be satisfied." □

## RESOLUTIONS

**Originating for the most part at the District level, these motions reflect the problems confronting the municipal Hydro utilities across the province. They are the machinery of change.**

In two lively sessions constituting the equivalent of almost a full day's deliberation, convention delegates disposed of 22 resolutions on subjects ranging from appliance research to advertising funds, and from delinquent account collection emergency procedures in the event of natural aster. Some were resolved in rapid-fire order wi others brought delegate after delegate to their f on motions which were eventually determined the slimmest of majorities.

One of the most contentious resolutions pro to be a subject which had been put forward several occasions in the past — only to be feated. This year, by a small majority, delega agreed that the OMEA executive should seek le lation enabling utilities "to refrain from supply or continuing to supply energy to an applicant customer who, to the knowledge of the comm sion, is indebted to another utility in the provi for the supply of energy."

It was pointed out in discussion that custom leaving one utility for another without setti their Hydro accounts were a serious problem some areas with highly mobile populations.

In urging delegates to support the motion, drew Frame, Burlington, said it was one way demonstrate solidarity between utilities.

"We speak of the Hydro Family," he said, " partners in power. This is an opportunity to sh the people of Ontario that all the 357 Hydro m cipalities are indeed one family."

While favoring the change, L. L. Coulter of tawa, felt that if the enabling legislation was fo coming, some sort of central clearing house wo be required in order to keep track of delinqu customers on the move.

Ted Dash, Sudbury, urged rejection of motion, contending that a newcomer to a m cipality should "be given a chance to start off w a fresh slate."

*Reeve True Davidson, East York.*



*Mayor L. E. Cooke, Barrie.*



*Tom Barnes, commissio Niagara Falls.*



resolutions, approved without opposition, med at forestalling any legislative changes would affect the constitution of Hydro in vince.

first reiterated the association's stand a recommendation of a select committee of gislature that the functions of public utili- nmissions be performed by municipal coun- termed the proposal "retrograde" and the best interest of the electrical users of vince.

r L. E. Cooke, Barrie, who has been among ding opponents of the select committee's endation, recapped for the delegates the reasons why he considered the proposal ed.

similar theme, it was resolved that the ure be petitioned "to continue the separ- The Hydro-Electric Power Commission and nicipal utilities commissions from the legis- unction."

carried without dissent was a motion which ave the effect of extending Hydro's oper- in the field of research. It called for the n of funds for research on new and im- "load-building appliances" as a long-term n to the present marketing program.

iderable discussion and much difference of centred around a resolution seeking legis- ermitting staggered terms for Hydro com- ers in municipalities where elections are ery two years. It was approved by a close g vote.

ining the background of the motion, Dr. ay, Kingston, who chaired the session, said had been approved previously but no action had been forthcoming. As worded this time, he said, it would be submitted to the Minister of Municipal Affairs with the request that the amending legislation be introduced as early as possible. He pointed out that where elections were held every year, councils could provide for staggered terms for Hydro commissioners — they had no such power in the case of two year terms.

Objections to the resolution were based mostly on the grounds that the staggered system violated democratic principles. It was held that an elected body should be responsible as a body for its actions — otherwise responsibility was difficult to affix. Others objected because, in effect, it meant four year terms and the voter should be consulted more frequently.

Speaking for the motion, E. R. Alexander, Barrie, said the staggered term was in the public interest because it provided improved continuity of service.

W. E. Wright, Toronto Township called the motion democratic in that it left length of office to the discretion of the municipalities.

Emergency procedures covering mutual assistance for utilities hit by storms and other natural disasters were the subject of another resolution. Approved unanimously, it recommended that the operations engineer in each Ontario Hydro region act as co-ordinator for help assigned any utility in time of trouble. It provided that the utility giving assistance send a bill for labor, material and other costs to the system receiving aid.

On the grounds that a shortage of trained utility office help exists, and will grow more acute, a resolution was passed asking the OMEA executive to consult with the AMEU and Ontario Hydro on the advisability of initiating a training program.

A resolution originating in Northwestern Ontario urged Hydro to assist in opening up the North by extending service to tourist resorts and villages still dependent on their own power supplies. Acknowledging that economics were a consideration, Mayor H. F. Keffer, Sioux Lookout, said that these extensions were necessary even if some sort of subsidy were required.

In a move to obtain maximum benefit from load-building efforts across the province, another resolution proposed that the reports of all district load building committees be forwarded to the secretary of the OMEA for incorporation in a single report. This would be distributed to the chairmen of load building committees across the province.

A request that Ontario Hydro make its $500 bursaries available to all new universities in the province as they assumed full operation was approved by the delegates. They also said yes to a motion seeking changes in the Municipal Act which would, in effect, enable councillors running for Hydro office to hold their council seats until taking over on the Hydro commission.

The Minister of Energy Resources will be asked to investigate land financing as practised by producers of energy as the result of another resolution.

Two resolutions bearing on the allocation of advertising funds within the Hydro organization were referred to the Advertising and Sales Co-ordinating Committee for study and report.

Defeated were resolutions having to do with fees charged for the collection of Hydro rural accounts; the Commission's fleet purchasing procedures; and a request for an audited statement of the municipal pension and insurance fund. □

*f hands indicates stand of these delegates on one of 22 resolutions considered at convention.*





## J. M. HAMBLEY: "The elements were not altogether kind to us in 1964."

Although bruised by the elements, Ontario Hydro and the municipal utilities weathered 1964 very well.

Ontario Hydro General Manager J. M. Hambley told convention delegates, "In referring to the elements, I use the word as the ancient Greeks used it, meaning earth, air, fire and water."

Earth presented no particular problem for construction crews, but air, fire and water were less kind. Below normal precipitation, weak run-off, trickling stream flows and undernourished storage conditions crimped output from hydro-electric stations on the Niagara and St. Lawrence rivers. Severe ice jamming in January, 1964, further reduced output at the Niagara plants.

A famine of water and a feast of ice tallied up a tall bill at the end of the year, Mr. Hambley said. Lost output by the hydro-electric stations in 1964 was equivalent to 1,760,000 tons of coal costing $16,000,000.

But the burden of extra cost was less devastating than might have been expected. While the loss was not less, Hydro's practice of setting aside a reserve fund for such emergencies paid dividends and no serious effect on rates resulted.

One occasion when "air in motion" created havoc occurred mid-way through 1964 when tornado-force winds ripped through extra-high-voltage lines near Parry Sound toppling six V-type steel towers.

"That cost us about 240,000 kilowatts of power for several days," said Mr. Hambley. "Until a wood-pole diversion around the damaged section was completed, Little Long and Otter Rapids generating stations yielded no energy.

"Air also bothered us on several occas moving with great force in the wrong d across the surface of Lake Erie, piling up v its western end, and reducing the flow dc Niagara to an embarrassing and almost u trickle."

Where fire was concerned, Mr. Hambley that the only serious one occurred in the western Region at the remotely-controlled Falls GS. Extensive damage to a generato halted flow of electricity from one unit th August.

"In retrospect, I believe we may justifia that in spite of set-backs, Ontario Hydro municipal utilities moved ahead strongly in Mr. Hambley concluded.

## H. J. SISSONS: "Coal purchasing must a well planned integrated process betv buyer, producer and transporter."

Removal of a 50 cent a ton tariff on Unitec coal would save Ontario Hydro some $1.5 a year at the current level of purchasing J. Sissons told AMEU convention delegates.

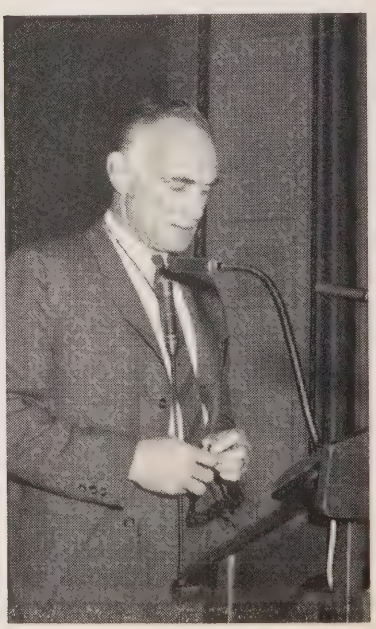
"It is obvious from the position of C coal that this is not a tariff or a duty to pro home market (but) is nothing more than Hydro's assistant general manager—Servic

"We have been working since 1959 v Dominion Coal Board and Ottawa to have t removed, or set aside by exemption, or dra

*J. M. Hambley*



*H. J. Sissons*



as been done in the case of coal for use in the ufacture of coke and synthetic rubber."
e closest and cheapest source of coal for o's thermal-electric stations are Pennsylvania, Virginia, Kentucky, and Ohio, he said. Many of e fields are of exceedingly high grade and offer rtunity for reducing mining costs under large- contracts and improved technology.
well, Hydro is now half way through a five- contract for a total of 2,850,000 tons of from Nova Scotia. Mr. Sissons said that with tance from the federal government the coal livered in Toronto at prices competitive with imports. Hydro intends to use as much Nova a coal as possible in the future, but this de- s on the subvention policy of the Dominion Board.
lur task has been to establish a long-term rated supply line, taking advantage of every ovement in transportation and handling that be devised. It was not simply buying coal on lock here, but reaching down into the U.S. to tiate arrangements which would provide the for cost improvements at every stage of the ly process."
. Sissons said a new set of contract principles established in the agreement to buy huge coal nents in 1964 and 1965 from producers in Virginia's Fairmont coal fields. He expressed faction that this purchasing approach will give the required flexibility and maximum econ- for the next few years.
tlining the many factors which must be con- ed in procuring coal, Mr. Sissons forecast that nal-electric stations will burn some 3,500,000 this year, and nearly twice as much by 1980, the amount should start to level off.
said that coal purchasing must be a well ied, integrated process between buyer, producer, and transporter. He commended Hydro's purchasing staff for its "research and development" attitude. Improved methods of ordering and handling coal supplies for Hydro's thermal-electric stations have trimmed approximately $1.50 from the delivered cost per ton of coal during recent years. □

# COMMITTEE REPORTS

## Electric Heating

Electrically speaking, the heat is on.

Last year, 5,635 all-electric homes were built in Ontario and 1,157 existing homes switched entirely to electricity. The number of new all-electric homes exceeded forecasts by 125 per cent, converted homes by 231 per cent.

And this year's results should be even better, Ray Pfaff, president of the Electric Heating Association of Ontario, told the convention.

"I am positive," he said, "that we are again going to exceed our forecast by a greater margin than we have in previous years."

The total number of electrically-heated homes in the province is now 14,365 with an installed capacity of 167,510 kilowatts. The association's Triple Seal of Quality was awarded to 950 homes in 1964, more than all the Triple Seals issued from 1958 to 1963.

"A great many of the remainder probably could have qualified, but no request was made to our association for these seals," said Mr. Pfaff.

The problem of keeping standards up to date is a challenge both to the association and the entire electrical industry, he said.

Training courses for contractors, which the association runs in co-operation with Ontario Hydro, may have to be upgraded, much work on warm air duct systems is necessary, and standards for hot water systems have to be prepared, Mr. Pfaff told the meeting. □

## Advertising and Sales

The co-ordinated advertising and sales effort of the total electric concept is showing results, W. E. Edwards, Sudbury, chairman of the OMEA's Advertising and Sales Committee, told the convention.

He declared that after close study the committee endorsed and heartily agreed with the joint promotion program launched by OMEA, AMEU and Ontario Hydro, and urged all members to get behind it.

"We feel that we started late . . . but coming into the back stretch, we are racing neck and neck with our competitor," he said.

It was the opinion of the OMEA committee, he said, that it should meet prior to the joint meeting to draft plans for discussion. This would ensure that the joint meetings would arrive at answers truly representative of the thinking of all facets of the Hydro family. He also suggested that guide lines established by the joint committee be revised annually to meet changing circumstances.

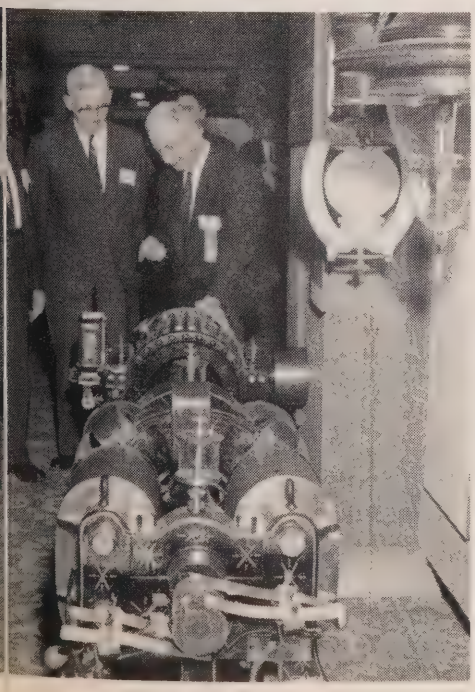
Mr. Edwards revealed that his committee had recommended to the OMEA's board of directors that a standing advertising and sales committee of not less than five members be appointed. One member would be replaced each year to ensure continuity and at the same time leave room for new blood. □

## Labor Relations

Several electrical utilities in Ontario have formed regional groups to co-ordinate labor relations programs, H. M. Scheifele, Waterloo, told convention delegates.

As chairman of the OMEA Labor Relations Com-

*splay from Hydro's collection of historic rical equipment drew much attention. n examining an old generator, left to right, I. K. Hamilton and N. D. Stewart, aceburg, and H. W. Vine, Napanee.*





*Examining the new commissioner's guidebook are, left to right: John McMechan, OMEA past president; Dr. R. H. Hay, president, and Dr. J. E. Wilson, 1st vice-president.*



*A symbolic gavel is presented to Nepean Township Hydro Committee—newcomers to the Hydro ranks. From left are: D. A. Moody, M. J. Montague, H. Hargreaves, F. R. Cross and I. Cotterill.*

mittee, he pointed out the advantages of the regional approach. Participating utilities are within easy geographic reach of each other and generally face the same union bargaining objectives and the same union negotiators. As a group they can set rough bargaining limits which members of the group strive to keep within during contract negotiations.

"Development of a co-ordinated management approach to utility-union negotiations has not come too soon," he said. "The year ahead is a peak negotiating year with some 37 utilities facing contract renewals in the first six months of 1965."

Mr. Scheifele stressed the need for prudence in negotiations. "We cannot be the leaders", he said "since our ability to pay wage and benefit increases is not based on the competitive forces which establish the going rates in general industry. Therefore, by any measure of logic or economics, we cannot lead in employee compensation.

"As progressive and enlightened management, we should be willing to follow the leaders, or even to be within the upper 25 per cent of employers, but we cannot set the pace or we will have a strong reaction from the people we serve." □

## Commissioner's Guidebook

The unwrapping of the long-awaited guidebook for Hydro commissioners, "Attention Mr. Commissioner!" was one of the highlights of this year's convention.

Holding aloft a copy just received from the printer, E. C. Dash, Sudbury, chairman of OMEA's guidebook committee, declared:

"It is full of the information you need to make you a well-informed commissioner."

Origin of the guidebook goes back more than 12 months. Its publication is part of a widened information program of the OMEA, called for by the commissioners themselves at the grass roots level of the organization. The handsome, illustrated guidebook has been compiled and produced by the committee with the assistance of numerous OMEA members and Ontario Hydro.

The contents of its 63 pages are desig
assist local commissioners in discharging th
sponsibilities — especially newcomers who
unfamiliar with Hydro's traditions and aims.
tains a history of the Hydro system in Onta
a simple explanation of the inter-relationsh
function of its various parts.

A glossary of terms commonly used in pow
duction and distribution is another feature
guidebook. Other chapters deal with pub
staff relations, parliamentary procedures a
ings, safety in utility operations and the
ance of sales and load building.

In his last appearance as chairman of the
book committee, Mr. Dash paid tribute to th
individuals who contributed to the publicati

"I do not suppose any of us realized ho
research is necessary to compile a handbo
gives you the answers to the many quest
which you have shown interest", he said.

Describing the handbook as "another mi
in the history of the OMEA, he concluded:

"I strongly urge you to read, mark, le
digest its contents. Do not glance through
ally and lay it aside. Study it thoroughly. It
duty as an elected representative."

Copies of "Attention Mr. Commissioner
been mailed to all OMEA members and seni
agement of the municipal utilities.

## Hall of Memory

The joint centennial year committee of th
AMEU and Ontario Hydro has recommende
Hall of Memory be located, at least tempor
the Sir Adam Beck-Niagara Generating
No. 1 at Niagara Falls.

The committee's report, delivered to t
vention by Dr. V. S. Wilson, Etobicoke, th
man, recommended that the project be co
in time for Canada's Centennial in 1967.

The Hall of Memory, which will honor le
the public power enterprise in Ontario, wa
ally planned as part of a proposed Hydro
The committee recommended that the men

*Getting their feet wet in OMEA affairs, these two convention delegates represented Plantagenet—a newcomer to the Hydro family. They are A. Pigeon, left, and R. Serge LaLonde.*



*Shields for the lowest accident frequency are received on behalf of Trenton PUC by the chairman, C. A. Baker, centre, and by William Graham, right, superintendent of Toronto Township Hydro. Making the pr entation is B. M. Graham, a director of the Electrical Utilities Safety Association.*



mporarily located in the foyer of the Beck plant
til a permanent museum is established.
The Hall of Memory would be included in tours
the Sir Adam Beck-Niagara No. 2 plant, which
open to the public the year round. Last year,
proximately 130,000 persons toured the develop-
ent.
The report of the committee now goes to the
ovincial Commission for consideration. □

## ccent on Safety

w aspects of municipal utility operations receive
ore emphasis than the safety of employees. And
ations for safety were again a highlight of the
EA-AMEU convention.
Award winner for 1964 in the 60,000 man-hour
d over category was Toronto Township Hydro.
enton PUC received the award in the up-to-
,000 man-hour division.
Each utility worked all of 1964 without a com-
nsable accident. Toronto Township scored 189,-
4 man-hours and Trenton's total was 56,011.
The end of 1964 also brought distinction to five
ner utilities, Electrical Utilities Safety Associa-
n Manager Harry Flack told Hydro News. For
em, it marked the end of six injury-free years,
nging all five to 100,000 man-hours and over
all in the under-60,000 man-hours a year cate-
y. The five were:
Bowmanville PUC, 101,642 man-hours; Brant-
d Township Hydro, 226,546; Carleton Place PUC,
3,206; Richmond Hill Hydro, 165,375; and Leam-
ton PUC, 122,285.
EUSA, which carries on extensive education
npaigns and accident analyses as well as tabu-
ng safety records, was formed 50 years ago.
re than 240 municipal utilities are members. □

## ong Service Awards

growing number of men who have devoted 15
rs or more to their communities through service
the Hydro enterprise attests to the dedication
municipal utility commissioners.
lt the 56th annual OMEA-AMEU meeting, Hydro Chairman W. Ross Strike praised the loyalty of the 22 men added to the list in 1964.

F. S. Thompson of Newmarket topped the list with 20 years; John Walker of Thedford was honored for his 17 years' service, and R. M. Simpson of Arnprior for 16 years.

Honored for completing 15 years' service were 19 others. Shown in the photograph are, front row, left to right: Henry Leavens, Bloomfield; A. R. Moore, Stratford; F. J. Julian, Woodstock; N. R. Craig, Burlington; George Hayes, St. Clair Beach; Charles Ellerbeck, East York.

Middle: Stewart M. Boyce, Cache Bay; Bruce H. MacPhail, Capreol; John Walker, Thedford; W. Clifford Salmon, Dashwood; Hercule Racine, Casselman; W. S. Atkin, Oil Springs; John Arcand, Cache Bay; W. Harry Rollins, Belleville.

Rear: Mayor Joseph Gibbons, Georgetown; George D'Orlean Sills, Seaforth; John McMechan, immediate past president, OMEA; W. Ross Strike, Ontario Hydro Chairman; D. P. Cliff, Dundas, OMEA secretary; William Newitt, Dundas; R. M. Simpson, Arnprior.

Absent were R. T. Gilbert, St. Thomas; W. F. Nickel, Stratford; Spencer C. Smith, Port Rowan; and F. S. Thompson, Newmarket. □

## ON THE SOCIAL SIDE
## "I'm glad I came"— was this lady's reaction to the convention

For Doreen Kolody, the 56th OMEA-AMEU convention was a whirlwind of "firsts."

She was attending the joint convention for the first time. Her husband, Carl Kolody, is a newly elected member of the Terrace Bay township council and an official OMEA delegate. Terrace Bay is on the rugged shores of Lake Superior about 135 miles east of Port Arthur.

This convention, in fact, is the first one of any kind she's ever attended. And the excursion from Terrace Bay was Doreen's first trip to Toronto.

"I was almost tempted to arrive at the Royal York in muklucks and a sealskin parka," she says with a chuckle. "I've been in the north so long."

A former school teacher, Doreen lived in Sioux Lookout, Sault Ste. Marie, and the Lakehead before moving to Terrace Bay. She and Carl arrived in Toronto early enough on the weekend preceding the convention to catch both an NHL and a junior hockey game.

"I found everybody very friendly and helpful once they knew I was a newcomer. But I suppose anyone would be a little lonesome if she didn't make some effort to come out of her shell and say hello."

Doreen's circle of new friends increased rapidly as the ladies' program got underway. She particularly enjoyed the invitation tea given by Mrs. W. Ross Strike at the Granite Club. It was an ideal opportunity for the "first-timers" to meet delegates' wives who have been attending the convention for several years, as well as the wives of OMEA-AMEU executives and Ontario Hydro officials.

The trip to Yorkdale Plaza was a program highlight as far as Doreen was concerned. Shopping in Terrace Bay is limited to two stores. Doreen bought clothing for her two small daughters, and a dress — which she wore to the banquet and cabaret that evening — for herself.

The Tuesday program also included a two-hour luncheon in Toronto's ritzy Franz Josef room. The menu included cream a la reine, baked Danube crayfish mignonnette, tossed salad Merry Widow, medaillon of veal au sherry, string beans, amandine potatoes, cheesecake, and coffee.

"Without the tea and the organized ladies program on Tuesday, I would have felt a little lost," Doreen confesses. "I think the organizers really go out of their way to make the convention enjoyable for the wives.

"Even the breakfast at 8 a.m. on Tuesday morning was fun," she says. "I've enjoyed every minute of the convention and my trip to Toronto. I did have some qualms about it all back home — but I'm glad I came". □

*Mrs. Doreen Kolody enjoyed herself.*



*se long service award winners and OMEA officials are identified in the item, above.*



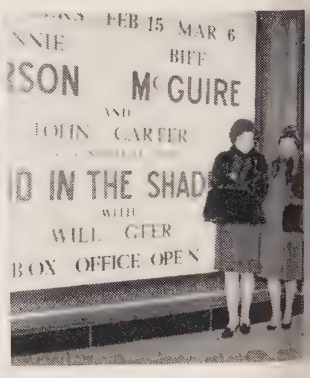


*The Sunday evening bonspiel has become a social feature of the OMEA-AMEU convention.*



*The ladies enjoyed tea at the Granite Club with Mrs. W. Ross Strike as host.*






*Shopping at Yorkdale Plaza and a play at the O'Keefe Centre were social highlights.*



*Hundreds made the 8 a.m. breakfast on Tuesday morning in the Concert Hall.*

**Cape Kennedy has nothing on this specialized Hydro team which does the count-down on giant steam-generating units.**



*Walter Goodbrand*



*Fred Greeves*



*Al Fendrick*



*Bert Kilbreath*



*Don Puttkemery*

# THE MEN WHO SAY GO

**by JACK BOITSON**

No one blasts off at the end of this count-down, but pre-orbital preparations could scarcely be more thorough. There is no room for guess work when a 20-storey-tall steam generator, like the ones at Lakeview, is fired up for the first time. Driving twin turbines producing 300,000 kilowatts of electricity, it builds up a thrust of nearly two million pounds of steam per hour at temperatures of 1,000 degrees Fahrenheit.

Hydro commissioning experts are as fussy about minute details in the various systems of the unit as the Cape Kennedy boys readying a rocket for its journey into space. Each system is checked out shortly after installation, including the fire protection system, condensate system, service air system, ignition oil system, and so on. A single unit involves the following checks:

—230 pressure switches.
—31 pressure control and reducing valves.
—60 temperatures switches.
—29 temperature control valves.
—64 level switches.
—23 level control valves.

Other essentials on the check list include some 300 electric motors and many miles of tubing, piping and electrical wiring. Every



*ng out the main steam lines, left, is the pectacular phase of commissioning. Loose is blown out to atmosphere with high-re steam. Pipes are acid cleaned, right, boiler is brought to full pressure.*



onent has to perform to rigid standards e the unit is ready for its trial run. For of these tests, the commissioning relies on instruments and controls built he equipment. Special test instruments ed for such purposes as checking metal th and vibration.

ile checking the mettle of metal and inery is an important phase of com-ning, equally important is the fetish for iness shared by the men who say "go" kets or generators. Commissioning engi-Walter Goodbrand explains it this way: irt, grit or foreign bodies in the boiler umps, the main steam pipes or any of nnards' where fine clearances exist, cause extensive damage.

classic example occured at the R.L. plant when a small elbow-shaped of tubing was left inadvertently in a line. Pressure blew the elbow into the e, damaging the blades."

resourceful as the housewife, commis-g men have a variety of cleaning me- in their repertoire. For example, the nsate system is flushed with a hot alka-olution. The feedwater piping, main piping, boiler, superheater and reheat-given an alkaline boil-out and they are leaned with acid to remove heavy mill Flushing with distilled water follows. ressed air is used to rid the lines sup- the pneumatic instrument circuits of oil and other accumulations likely to re with the reading.

sitors to the Lakeview plant probably we're sending our unit into orbit when ow out the main steam pipes," smiles r. "The noise and jet of steam rising a pipe at the side of the building are a eminiscent of a rocket lifting from its ing pad. Each test takes only a few nts but they have to be repeated a of dozen times in most cases."

e all the systems in a unit are pron-d "go", it is put through a series of uns until capacity output is reached. comes the critical load rejection test, f the final proving procedures before Okay is given to the unit. For this test, rbo-generator is brought to capacity ion and then deliberately taken out of to see how quickly the steam valves control the turbine speed. If it took han a second to stop the flow of steam, bine would speed up and disintegrate.

nging one of the large Lakeview units ervice takes from six weeks to six s, sometimes longer.

"Most components that could fail will do so during the commissioning procedures", notes Walter. "We subject all equipment to strains beyond normal operating requirements so that a safety margin is established".

The closely-knit Hydro commissioning team was not built up over night. When the first coal-fired units in the system were brought into service in the early 1950s, outside consultants carried out the commissioning. Hydro engineers worked closely with these experts, gaining valuable experience for the day when coal-fired plants would come to play a more predominant role in production. The Thermal Commissioning Department was formed within the Operations Division in 1961, coinciding with the start of operation at Lakeview. Mr. Goodbrand was appointed commissioning engineer and made responsible to the thermal operations engineer who is now E. D. Holdup. Four commissioning assistants round out the team.

There have been rapid advances in unit size since Hydro's first 66,000-kilowatt steam unit went into service at the J. C. Keith plant in Windsor, in 1951. And now Lakeview's 300,000-kilowatt units will soon be dwarfed by the 500,000-kilowatt giants scheduled for Lambton GS at Courtright which is to be in operation by 1969. Looking outside the system, TVA in the United States has recently ordered a 1,100,000-kilowatt unit — the world's largest. Where will it stop?

As Mr. Holdup explains: "theoretically, there appears to be no limit to the ultimate size of these generating units, but there is a practical consideration tending to limit size. Normally, the size of a unit has to be related to the capacity of the system: the unit should not exceed eight per cent of the system's total capacity.

"The reason is obvious. If we lost a bigger machine through failure or accident it would seriously jeopardize the balance of our system."

When the first Lambton unit is brought into service, the Commission's total generating capacity will be around 9,500,000 kilowatts. The 500,000-kilowatt unit will represent about five per cent of this total, well below the allowable figure."

To some extent the power grid, which embraces nearly half the North American continent through inter-connections, including Ontario Hydro, lessens the danger and may make larger units possible. A drastic drop in production by one utility can usually be made up by the rest.

Larger units offer important advantages—savings on construction costs, for example. Housing the 500,000-kilowatt units costs comparatively little more than the smaller ones. And it requires virtually the same manpower to operate a 100,000-kilowatt unit as it does for one five times as large.

Efficiency also improves slightly with size. Over the long term, technical progress has been such that modern thermal-electric units can produce almost three times as much power from a ton of coal as was possible four decades ago.

While improvements to coal-handling facilities, plant equipment and operating techniques must be taken into consideration, "economies of size" are evident in the decreasing cost of power produced at the Commission's coal-burning plants. Power from the 100,000-kilowatt Hearn units costs six mills a kilowatt-hour; Lakeview's 300,000-kilowatt units produce power at 4.3 mills and Lambton is expected to bring down the cost to four mills. These figures assume base load operation.

In the relatively short time since Hydro entered the thermal-electric field, Commission personnel have accumulated a vast storehouse of knowledge and knowhow.

"Numerous requests for information and assistance come in from other parts of Canada because Ontario Hydro is one jump ahead of other utilities in the thermal-electric field in this country," says Mr. Holdup. "And a high percentage of our generating equipment orders is now placed with Canadian firms. As these manufacturers gain experience their product improves and this, of course, makes our job that much easier." □

# ONTARIO MAY BE SINGING
# THE SUGARBUSH BLUES



PHOTOS BY TED JOHNS

**Maple syrup is still a favorite but its production is declining in this province.**

by Norm Panzica

Sugarin' time -- a pretty picture of woodlands and horses steaming along with their liquid burden sloshi behind. Close to a small shack, there's the smell of maple syrup in the making, steaming in a low vat over wood fire that's counterpoint to the fragrant mists.

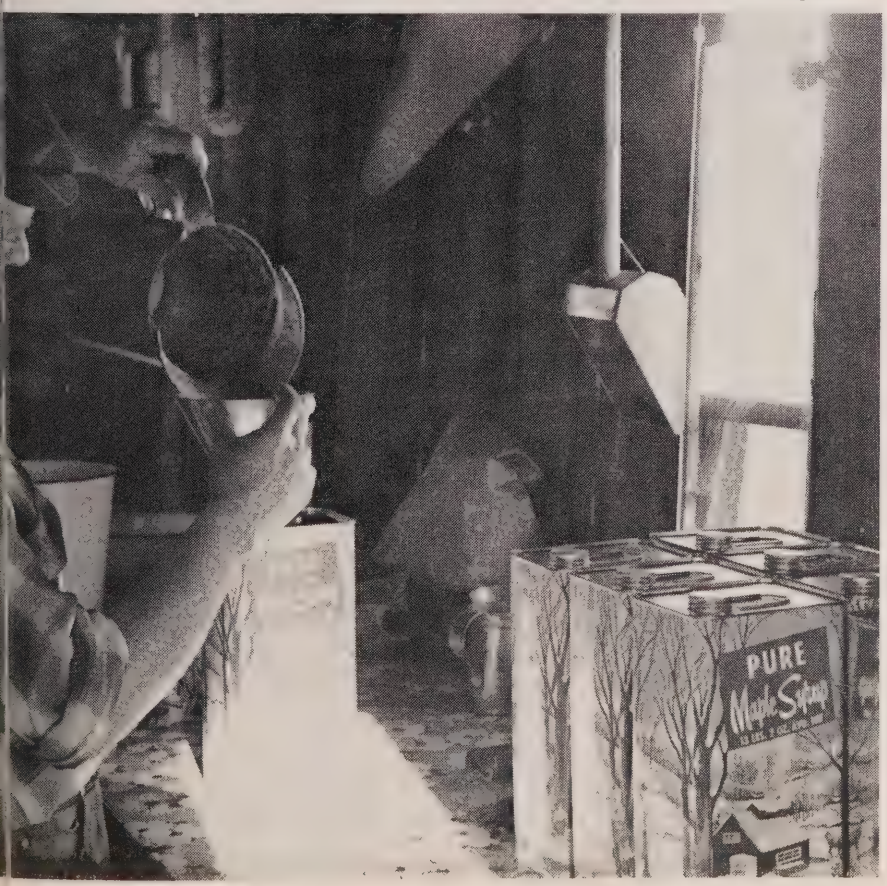
If you were ever a child who earned the honor of dumping a bucket of crystal-clear maple sap into t evaporator and were rewarded with a long cold swig out of the bottom of the bucket, you'll never forget

And you'll regret the decline of this warm Canadiana in Ontario.

Canadians still use maple syrup, of course; the per capita consumption of maple products is over a pound a



*e this are growing scarce in Ontario where the maple industry appears to be on the decline methods are eliminating much of its color. These photographs were taken at the n, north of Orillia, where "sugaring off" still combines business and pleasure.*




a quarter a year, while from 1956 to 1960 it was under half a pound. The industry brings Canadian farmers over $7,000,000 a year, mostly in Quebec.

But the industry is in sharp decline in Ontario, and modernization is changing, ever so slowly, the traditional picture.

Ontario production dropped from an average of 276,000 gallons a year in the 1955-59 period to 219,000 in 1963. Indeed, the Ontario Department of Agriculture, which can provide literature on dozens of subjects, has nothing to offer on maple syrup or its production. Quebec produces from eight to 10 times as much maple products as this province.

What's behind it? One factor is reduced woodland. The source of this refreshing sweetener, the sugar maple, is popular in furniture-making and the two industries are not compatible. Then too, in an affluent society, time and labor may be invested more profitable in other endeavors.

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Maple syrup is still a big favorite at the breakfast table but lower-cost artificial sweeteners have long played a major role in the production of such products as ice cream.

The Federal Food and Drug Directorate has very specific ideas about "artificial maple products" — indeed, they don't allow such a phrase.

The "do's" and "don't's" are set out in The Maple Products Act, which makes it illegal to call cookies "Maple Cookies" if maple sugar isn't used. If any product has the taste but not the real thing, the exact words "artificially maple flavored" must appear on the label.

A product's name must be "sufficiently different as to prevent deception", reads the law.

The government also stipulates that products labelled "maple syrup" must contain not more than 35% water and weigh at least 13 pounds, two ounces per gallon. And you can't grade it "light" unless a government spectrograph agrees.

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Basic production methods haven't changed much, of course, the idea being to make an incision in a tree, let the sap drip into a bucket, and then boil 30 to 35 gallons of sap to make one gallon of syrup.

But refinements are being introduced in the name of efficiency which threaten to remove some of the more romantic aspects of the industry. Long plastic tubes running from spigot to collector tanks, or even directly to the evaporator, eliminate both the horse and buckets. The horse has been replaced by the tractor in less advanced techniques and the traditional tin pail has given way to plastic.

Perhaps the next step will be the use of electric heat for evaporation. If the buckets and the horses go, why hold out for a wood fire? □

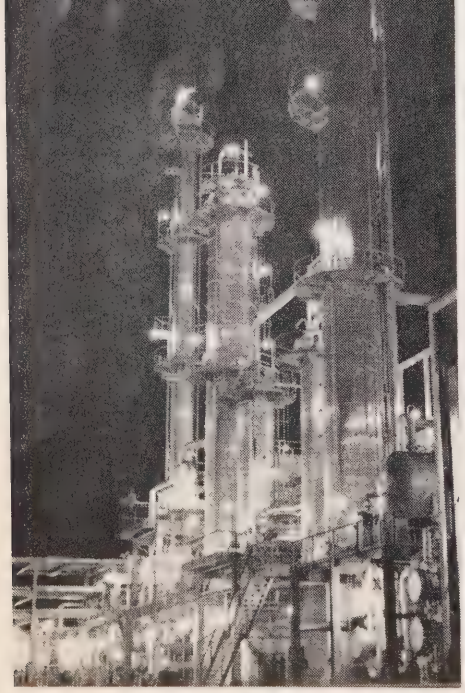
# ELECTRIC HEATIN

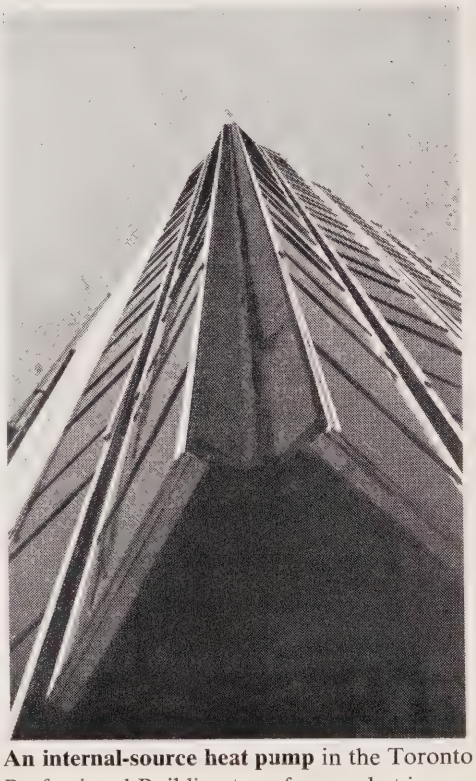
by JOAN ALLEN

**The $30-million oil refinery** built in Oakville last year by Shell Canada Limited is the first refinery in the western hemisphere to make almost exclusive use of electric power.

The all-electric design was chosen chiefly to minimize operation and maintenance costs, and to achieve the closer process control possible with electronic instrumentation. A total of 1,500 kilowatts of electric heat tracing, all thermostatically controlled, is used instead of steam tracing on virtually all pipelines in the highly automated complex. One of the most advanced in the world, the Oakville refinery is being closely watched by Shell companies around the world. The organization's entire basic cost and design philosophy could be changed by the results.

The refinery, which processes 31,000 barrels a day, is the largest user of electricity in the Oakville area, with maximum purchased power reaching 300,000 kilowatt-hours a day. □





**An internal-source heat pump** in the Toronto Professional Building transforms what is normally considered waste heat into useful heat.

During the day, all excess heat produced in the core of the building by lighting, people, and mechanical equipment is extracted and used to supply heat for offices in the perimeter of the building.

When the building is unoccupied, water heated in a boiler by 1,200 kilowatts of electric immersion heaters supplies heat as it is required. Electricity used for heating during unoccupied periods never exceeds the daytime peak demand, and is therefore charged for at the lowest electrical rate.

The 16-storey Professional Building in the heart of downtown Toronto houses doctors' and dentists' suites, as well as office space for a number of service groups. While assisting in the heating function, the office lighting, at 100 footcandles, conforms with illumination recommendation. □

**Electric process heating** plays an impo role in Canada's newest rolling mill, Ontario Steel Company, which starte steel-pouring operation near Whitby in 1964.

The first electric-arc furnaces install the mill provided a steel-melting capac 100,000 tons a year. Early in 1965, ca was doubled with the installation of a furnace.

A unique feature of the plant is its co ous casting technique. Molten steel, t from the furnace, is poured as a conti ribbon in a solid state at 2,300 degr and moved directly to the rolling mill it is formed into rods, bars, and angles out reheating. The usual billet stag associated soaking pits are by-passed pletely.

An eight-million dollar enterprise, the Ontario Steel plant will supply 3,600 t steel for the Toronto-Dominion foundations, in downtown Toronto, an to 500 tons for each floor, for a to about 30,000 tons of steel.



ic heating leads a full life. It attends school church. It is at home in subdivisions and ment blocks, and is occasionally in the dog-. It works in offices, plazas, and restaurants, t stays in the best motels. Electric heating e found underground in mines, working in and newspaper offices and auction barns, elaxing at ski resorts, drive-in theatres, and g alleys.

process heating, it melts chocolate and dries paint on cars, and peels apples.

ctric heating is involved, in fact, in almost type of commercial and industrial enter-around. In the last few years it has won over a businessman, who, traditionally, takes a nd-see attitude toward new methods and new cts. □

# GETS AROUND



**ed heaters** kept weary skaters warm inter at the new outdoor City Hall rink ntown Toronto.

people-heaters, as infra-red heaters fectionately called, were installed on erimental basis over the skaters' bench side of the ice.

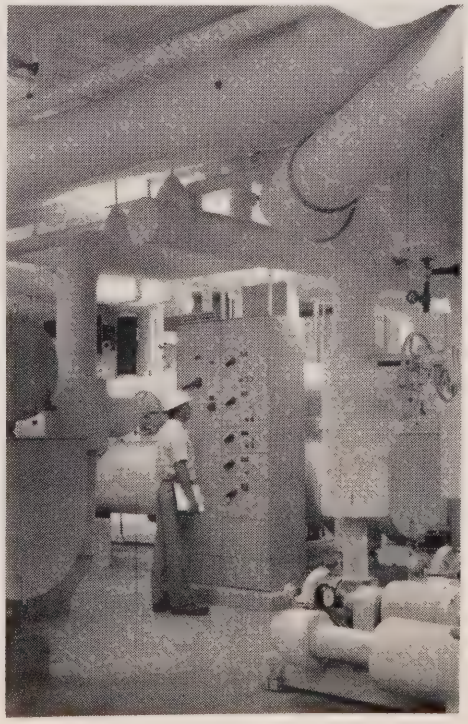
e the sun, infra-red rays heat the people jects they strike, but do not heat the nding air. Heating by this method in-directing the high-temperature rays fixture designed to control and project nto a specific area — in this case the ' bench. The nearby ice surface is not d.

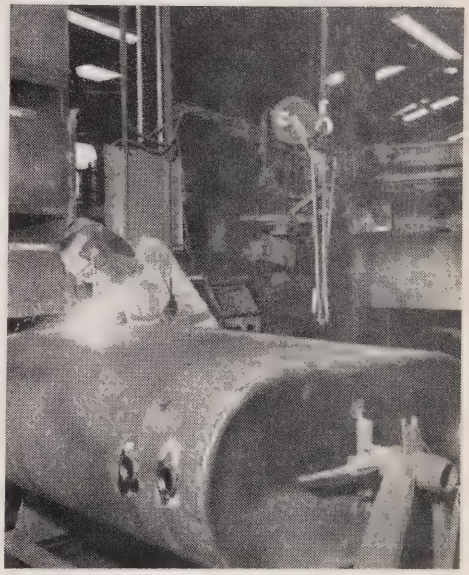
e, four-kilowatt quartz lamps were t the City Hall skating rink. Because ere designed for use outdoors, the fix-ere not affected by snow or below-zero atures. A bonus from quartz lamps is asant level of illumination which is ed. Infra-red electric heating is now ed in arenas across the province. □

**New headquarters** for Dominion Foundries and Steel Company is a five-storey steel showcase in Hamilton, in the heart of the company's steel-making operation.

The $5-million building is electrically heated and cooled, in answer to Dofasco's request for the "very best air conditioning and heating system available." A 1,000-kilowatt heating coil — thought to be the largest in North America — is at the heart of the building's double-duct warm-air heating system. The heating coil is set in the main air-plenum and air is circulated by two 100-horsepower fans. Air in the other duct is cooled by two 182-ton centrifugal refrigeration compressors, and then blown to thermostatically controlled mixing boxes. Thermostats control temperature by modulating hot and cold-air dampers in each mixing box.

Besides providing an engineered environment for Dofasco employees, the building's electric heating system is flexible enough for present needs and future expansion. □





**Off-peak electricity** heats the 2,640-square-foot office building of Clemmer Industries Limited, in Waterloo.

Designed by the owner, Arnold G. Meyers, the heating system consists of electric immersion heaters totalling 45 kilowatts in a 1,500-gallon water-storage tank. During the day, hot water is circulated, as required, by two circulating pumps to baseboard heaters in the two zones of the office building. Each zone has its own thermostat.

So that electricity used for office heating never appears on the plant's 225-kilowatt peak, controls prevent the immersion heaters from coming on when plant equipment is operating. Heat requirements are supplied by the hot water held in the storage tank when power is not available.

The company uses electricity in the factory itself to automate many of the steps required in the manufacture of storage tanks, culverts, pressure vessels, and metal consumer products such as ornamental railings, and snow-removal equipment. Mr. Meyers personally designed many of the machines, including the only one in North America which automatically fabricates a domestic fuel-oil tank in one continuous operation. □

# NEW CONCEPT IN COAL HANDLING

**Ontario Hydro coal is now being stockpiled on Lake Erie for transhipment by water.**

*This artist's conception shows the new dock and storage depot at Conneaut, Ohio. Circled letters indica feeder tracks capable of handling 450 railway cars; (b) thawing shed for winter unloading; (c) unloadi which will take 3,000 tons of coal per hour; (d) control tower; (e) conveyor belt which will lift coal from u ing pit to transfer point on ground level; (f) inbound conveyor to feed mobile stacker; (g) dozers to shap compact coal piles; (h) outbound conveyor capable of supplying 2,000 tons an hour; (i) cone of coal over r pit which will provide 3,000 tons per hour; (j) surge bin to permit unloading and reclaiming to continue at a rate, independent of boat loading interruptions, and (k) boat loader fed by seven-foot-wide belt.*



Freight cars, like husbands, hate to be kept waiting and in the former case they are doing something about it — where coal is the cargo.

Idle railway cars cost money and this is one of the problems being overcome by a multi-million dollar dock and storage depot being built by the Bessemer and Lake Erie Railroad to handle American coal destined for Ontario Hydro. For the first time, coal is being put into winter storage at a Great Lake's port for transhipment during the navigation season.

The new facilities at Conneaut, Ohio, will reduce Hydro's transportation costs by cutting vessel loading time by about one-half, and hastening the turn-around of trains from the coal fields. In addition, coal production becomes independent of seasonal lake transportation.

This year the dock, scheduled for completion by the start of navigation, will handle about 2,000,000 tons of coal purchased by Ontario Hydro to feed the hungry furnaces at the R. L. Hearn and Lakeview generating stations. Initial storage capacity at Conneaut will be one million tons, with provision for expansion to double this amount.

As Harold Kennedy, Hydro's manager of purchasing, says, "Hydro expects to accummulate about half a million tons of coal at the Conneaut dock before the opening of navigation. This storage coal will be used to supplement coal arriving by train at the dock during the spring, summer and fall to ensure that boats are not kept waiting."

Here is how the installation works. Coal from 50-car trains, pulled by drone locomotives, is dumped directly into underground hoppers without the need for uncoupling the cars. It is then moved on a convey to a transfer point at ground level where it goes to storage pile or into th of a boat. The trains can unload at t of 3,000 tons an hour.

Boat-loading time will be even faste a giant conveyor belt dumping an est 4,500 tons of coal an hour into the h vessels for transportation across Lak and Ontario.

A big bucket-wheel machine eats i storage piles, reclaiming 2,000 tons a while a reclaim pit under the main pile feeds into the loading conveyo even faster rate. Any combination loading pit, reclaim pit or reclaim wheel can be used at the same time

From a console in a three-storey tower, an operator oversees and dire entire automated process.

# ALONG HYDRO LINES

## hts and water heaters

) Hydro plans to spend $3,035,000 for the purchase and installation er heaters in the 1965 rental and sales program for rural customers cal systems operated by the Commission. This would cover the installa- 29,000 units, 3,000 more than last year, with the average cost being d by $5 per unit.

purchase and installation of 5,000 Dusk-to-Dawn lighting units is also d for 1965, under the same program. □

## ctric Service League reports

nual meeting of the Electric Service League of Ontario, held February oronto, drew more than 80 people to hear a resume of activities and t officers for 1965. Pictured below, the new executive includes, left t: Harry Foy, manager and secretary-treasurer; R. L. Mooney, Square npany, president; J. W. Kerr, Triangle Conduit and Cable, 1st vice- nt; T. J. Curtis, New Toronto PUC, past president; and I. O. Mather, ward Limited, 2nd vice-president.

s annual report Mr. Foy told the audience that 858 electrical con- s and sales representatives had attended 26 Medallion conferences the province since February, 1964. The objective was to instruct people in the requirements of Medallion standards.

lso revealed that League field supervisors, at the request of CEMA, npiled lists of builders across the province, indicating their proposed ction for the year with a break-down of types of houses and method ing. He said the program was being continued this year and should elpful in suggesting building trends and pin-pointing areas where activity should be directed.

Foy said that certification had been extended to 883 electrically homes built to all-electric and Gold Medallion standards during 1964. s 21.4 per cent of the newly constructed electrically heated homes rio.

nection results indicate that a large percentage of the balance met ctrical requirements of the Medallion Standards", Mr. Foy said, "but ous reasons failed to meet those of the Triple Seal of Quality. Many ints were received from people who anticipated receiving a Medallion but failed to qualify due to failure to meet the thermal insulation ments.

ppears to us", Mr. Foy said, "that the necessity for Triple Seal of award is impeding the promotion of the electrical aspect of the n project." He felt that the Triple Seal requirements should be d from the Medallion standards.

her phase of Electric Service League activities growing in importance




was the preparation of wiring layouts on builders' drawings, both custom and speculative. Last year the League staff prepared 713 of these drawings — an increase of 309 over 1963. "It has been our experience that builders follow these layouts, resulting in better installation and a minimum of follow-up by our staff," Mr. Foy said. □

## Things are looking down



This is the view from the bucket of Sarnia Hydro's new truck, which will be used for line work and tree trimming. Crews will be able to work comfortably at heights of up to 45 feet, insulated against nearly four times the voltage they would normally encounter. Shown straight down and from left to right are: William Doyle, Sarnia Hydro sales manager, John T. Barnes, chairman, Charles Phelps, manager and Joe Reeves, service manager of the equipment company. □

## D.C. for B.C.

British Columbia Hydro has awarded an initial multi-million dollar contract in a project which will provide large quantities of power to Vancouver Island from the mainland. The direct current transmission line, scheduled for completion in 1967, will carry an estimated 624,000 kilowatts by underwater cable to the island. It will be the first large-scale D.C. transmission scheme in the Western hemisphere. The initial contract, totalling approximately $14 million, has been awarded to Canadian ASEA Electric Limited, Canadian representatives of Almanna Svenska Electriska Aktiebolaget of Vasteras, Sweden.

The contract covers conversion equipment to be installed on the mainland which will convert power to direct current for transmission to the Island and for the installation of equipment on Vancouver Island to change the power back to alternating current for distribution. □

## Eagles Leery of Eyrie

Blithely unaware of the potent force they were flouting, a pair of eagles recently chose tower No. 77 on the 115,000-volt line between Sarnia and Chatham for a nesting place. And their luck almost ran out at 11.31 a.m. on a Sunday morning.

The regal birds had built an eyrie about 20 feet below the tip of the 85-foot steel tower. From here, they could scour the countryside for prey or quickly soar to the game-rich marshes about 10 miles to the west.

Their nest was an untidy mass of tree limbs about the size of hoe handles, reports lineman Frank Dymock of Wallaceburg R.O.A. Each limb was about 1½ inches in diameter and six feet long.

The eyrie was built on a v-shaped crossarm, less than five feet above the power lines. When two of the wet "hoe handles" touched the conductors, the flash probably scared the eagles out of their wits.

The resulting interruption to Wallaceburg area customers lasted only 21 minutes, but the circuit was not restored for about five hours.

Frank Dymock, accompanied by Lineman George Ross, had to trek four miles across soggy farm fields before they spotted the eagles' tower-house through the fog and rain. The birds had taken off but they left fresh evidence of a recent departure.

Frank, who has seen eagle nests in tall Elgin County trees to the east, thinks they probably took refuge in a nearby bush.

The linemen gingerly removed the nest from Tower 77 to prevent future

power interruptions — and to ensure that the birds didn't push their luck too far.

Conservationists would probably agree with their action. Roger Tory Peterson, the famed American naturalist, says in a recent book, that eagles build up their nests year after year. A bald eagle nest once found in the U.S. was nine feet in diameter and weighed two tons! □

## Long service with Toronto Hydro



Despite plenty of roast beef and all the trimmings, the effects of the "hungry thirties" were still evident at the recent banquet of Toronto Hydro's Quarter Century Club.

Not that everyone tucked in as though they hadn't eaten a square meal in 30 years. But new 40-year employees outnumber those attaining 25 years' service 17 to three, reflecting the lack of hiring in those depressed days and in the early war years.

This swinging, singing, affair in the Crystal Ballroom of Toronto's King Edward Hotel was nevertheless far from depressing and 30 members heartily added their own vocal accompaniment to an accordion band.

Two gold stars on his lapel marked the club's all-time record holder, Arthur A. (Bert) Gibbs, an employee now for 51 years.

Guests of the evening included Mayor Philip Givens, Toronto Hydro Chairman John McMechan, and Harry Hyde, general manager. They were welcomed by T. W. Corner, club president.

Pictured above are two 25-year newcomers to the club, Percival G. Nancekivell and Frank F. Taylor. Left to right are Harry Hyde; Mr. Nancekivell; Mr. McMechan; Mr. Taylor and Mayor Givens. □

# MUNICIPAL BRIEFS

**Brockville PUC's** J. E. Shields, supervisor of sales and service, reported that 361 water heaters were installed in his city during 1964. "The introduction in 1964 of our new rental-purchase water heater plan has definitely helped to retain our load. With the adoption of the new plan, our customers know in advance what equity they have in the unit and that after 90 months they will own the water heater. The overall plan has proven to be a shot in the arm for our water heating load and the plan is being well received by our customers and allies."

**Wallaceburg Hydro** has recently purchased Ontario Hydro's rural distribution facilities in an area of Chatham Township annexed by the town. Cost was $115,000. Involved were 678 customers, 9.5 miles of primary line, 64 transformers and 30 water heaters.

**A new high school** in Dundas will be heated with a hot water circulating system supplied from a central storage tank. Off-peak or "valley-hour" power will supply about 18 per cent of the total annual heating requirements and will be separately metered. An additional 18 per cent will be supplied through regular electric service and will be controlled off the peak created by the normal lighting and equipment load of the school. The balance will be supplied through the regular electric service.

**Trenton PUC** plans to take out insurance to cover commissioners against libel and slander claims.

**Chippawa PUC** is planning to build a $16,500 service building. It will be a single-storey concrete block and brick structure with approximately 2,800 square feet of floor area.

**Hespeler Municipal Council** is investigating the desirability of establishing a public utilities commission, combining electrical and water services. Presently there is a Hydro Commission and the waterworks is adminis by a committee of council.

**Ridgetown PUC,** which recently assumed operation of the local s from Ontario Hydro, plans to purchase a truck, hire a technical emp and possibly build a new PUC office in 1965, according to the Ridg Dominion.

**Waterloo PUC** customers will be receiving electric and water bills puted in Guelph, beginning May 1. The Waterloo commission estimate will save approximately $400 a month by having the Guelph Boa Light and Heat's new punch-card system do the billing. The Guelph will benefit by higher utilization of equipment.

**Southampton PUC** plans to purchase land to construct a new office, and garage building.

**Port Colborne Hydro** Commission appointed Arthur Fort, manager, representative on a newly-formed, 11-man local Economics and De ment Commission.

**North Bay Lakeshore Resort Association** has asked West Ferris Hy dim the new lights along the shores of Lake Nipissing this summer. A ing to the North Bay Nugget, the lights attracted droves of shadflie summer, forcing tourists to depart to less infested areas. This is the type of pest which is expected to plague Expo 67 and against counter measures are being explored.

**Peterborough Utilities Commission** sponsored a six-week industria tricity course last month. Experts from industry, provided by the Ele Bureau of Canada, spoke on subjects ranging from lighting and d tion systems to motor selection and electrical space heating for in Approximately 35 electrical maintenance personnel and electrical c tors attended. This is the ninth such course sponsored by the Bureau its inception in 1962.

**A scheme** for the spectacular lighting of University Avenue and naming of the thoroughfare to Avenue of Lights was revived at a regular meeting of the Toronto Hydro Commissioners. Harry Hyde, manager, said he first suggested the idea several years ago beautification of the middle strip was planned. With the median completed, incorporating light, he said the job now was to persuad ing owners to embark on a flood lighting program of their own pr This would be followed by special street lighting.

## The lady is a tramp

The Cape Breton Miner, which has carried coal from Sydney, Nova S Ontario Hydro's thermal plants in Toronto since last June, is now ply warm waters of the Caribbean. She's on a three-month charter, bring from Venezuela to steel plants in the United States. Following the cl the St. Lawrence Seaway, December 5, the 680-foot, ocean-goi freighter has carried Canadian wheat and U.S. corn to Rotterdam delivered iron ore pellets from Seven Islands to Maryland.

## It's an old European custom

No, the man pictured below hasn't found a new use for old Christm . . . he is actually taking part in an old German house building c in Orangeville. In constructing a home in Germany, it's the custom brate the completion of the roof or the raising of the rafters by a wreath of boughs on the structure. In Scandinavia the builder usually climbs to the top with a wreath symbolizing personal and c tive achievement. Variations of the ceremony are followed in Me



tern countries. No matter where it is held, the ceremony is intended ify security to families living under the new roof.

ntly this custom was followed in Orangeville where builder Frank n, manager of AB Investments Limited and contractor for the new in Court Gold Medallion development, celebrated the roof-raising colonial style town house units. Encouraged by voices and brooms, n George Longridge planted the decorated tree on the peak of the

units of four suites each are to be completed in this all-electric oment by spring. The company expects to construct 80 more. □

## boom success



rie ice boom installed this winter across entrance to Niagara River ario Hydro and the Power Authority of the State of New York has highly successful. Scalloped ice pattern outlines arches of two- oom, consisting of floating timbers anchored to the lake bed, n Buffalo breakwater and the Canadian shore near Fort Erie. Struc- ownstream from the boom are Buffalo municipal water intake and ion marker. The boom has assisted in forming ice sheets on Lake d in limiting discharge of floes in the river which sharply reduced of power stations last winter. Similar booms have been used success- r several years to control ice above the international St. Lawrence ing stations. □

## theastern increase predicted

rm forecasts indicate that Ontario Hydro's Northeastern Region power ments will increase 33 per cent by 1969, commented Regional r A. B. Hayman recently. During 1964, power demands in this region led stable, reaching a peak of 596,000 kilowatts in December.

nt developments cited as likely to influence power demands and the regional economy included iron ore developments near Kirkland Lake nagami; asbestos from Reeves Township; zinc, copper and silver mmins; and the possible manufacture of phosphoric acid at Nemegos dboard at Chapleau. □

## npaign reaches 41 million families

e Better Electrically advertising campaign in the USA will reach 41 of America's 55 million residential families in 1965.

ding to the Edison Electric Institute, this promotion will serve as one nost effective forces motivating consumer purchases of major electric es, electric heating systems and total electric Gold Medallion Homes. ing will be concentrated in magazines with an ad appearing nationally average of once every eight days during 1965. □

## uble with "total energy"

ng to Electrical World, the natural gas industry, in its push for the nergy" package, has already had a few dissatisfied customers. In two s, the report states, where "isolated" generating plants have been ll, the customers have had them removed after varying periods of n. They were found to cost more to buy and operate than advance in- n indicated and performance was not as claimed. Also, noise and the rs' inexperience in operating a power system were other discourag- ors.

e case of a luxury hotel, outages occurred often. Generators had trouble picking up heavy motor starting loads, such as required by an elevator needing 345 kva of starting capacity.

At a bowling establishment, according to the report, on-site generation was tried for three weeks. Three, 220-hp, natural gas engines with 100 kw generators were installed. In the three weeks, there were several interruptions of 20 to 30 minutes each and voltage dips occurred frequently. Noise complaints were received from nearby homes and to top it off, the complete system failed one evening with a full house of bowlers. □

## New payment plan

An "Equal Payment" plan is being offered this month to the majority of the electric-heating customers serviced directly by Ontario Hydro. This is an option to regular billing. The plan provides for rural residential customers on all-electric rates and for farm and commercial customers on electric heating rates to break down their total annual costs of these services into 12 equal payments. At the end of the year, any credit or amounts owing will be adjusted over the following 12 months. Although the Equal Payment plan runs from June to June, customers may join anytime. This plan replaces the Budget Payment Plan which was spread over 10 payments a year. □

## Money talks

A 10 per cent reduction on homeowners' policies for homes which use electricity as the sole source of energy is being offered by National Union Insurance Companies in Pennsylvania. According to Electrical World, West Penn Power Company originated the plan which will be offered to all electric utilities in the state. □

## New Hydro customer

Canadian Industries Limited plans to build an ammonia and fertilizer plant near Sarnia as part of a chemical complex occupying some 350 acres of land, initially. The company has purchased 1,400 acres with future expansion in mind. This plant will convert natural gas into ammonia, ammonium nitrate nitrogen solutions, nitric acid, urea, and ammonium phosphates, all of which have extensive use as fertilizers. C-I-L engineers estimate that about 2,000 kilowatts of power will be required by January, 1966, increasing to some 16,000 kilowatts by April 1, 1966. □

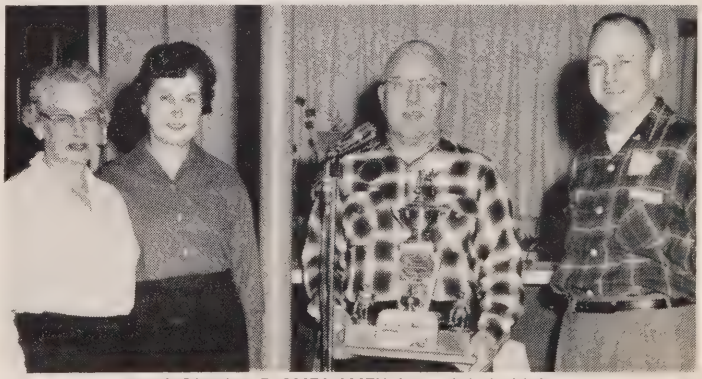
## Electric lights for long life!

The Canadian Electrical Association Newsletter quotes the following intriguing remarks by a W. H. Preece who was speaking at a meeting of the British Association, in Montreal, in 1884.

He was describing one of the first lighting installations in England:

"Until we can get electricity supplied to our doors, we must look on electric lighting as a luxury, and should be prepared to pay for it as such. But as a luxury it is nothing compared with the cost of a carriage or with one's wine bill. The next thing notable is the steadiness and comfort of the light; the durability of decorations which are not injured by the electric light; the absence of heat and of destructive gases; the nonvitiation of the air and the longer life one gets. I shall live three or four years longer with electric light than I would with gas, and all these things make up a splendid result for any amount of money you may spend." □

## 4th annual Bonspiel



The fourth annual District 5 OMEA-AMEU bonspiel, held last month at St. Catharine's Lincoln Curling Club, drew 30 rinks from a wide area. Winners of the Ferranti-Packard trophy, from Niagara Falls Hydro, were left to right: Nellie Jones, vice-skip; Jenny Wincott, 2nd; Dick Jones, skip and Jim Wincott, lead. Runners-up represented Northern Electric Company. □

## Record sales for TVA

Tennessee Valley Authority announced in its 31st annual report a record sale of 68.4 billion kilowatt-hours of electricity in the 1964 fiscal year. This was an increase of 4.6 billion over the previous year for the big, publicly owned system. Over 27.8 billion kilowatt-hours went to 155 local distribution systems, and 25.4 billion was consumed by Federal customers, principally the Atomic Energy Commission and military installations. The balance was purchased by directly served industries. TVA now services nearly 1.6 million homes, farms, business firms and industries in parts of seven states.

Ontario Hydro's total sales for 1964 amounted to more than 41 billion kilowatt-hours and approximately 24.4 billion were bought by 357 municipalities throughout the province. □

## The fight goes on

Ontario Hydro is among several donors such as municipalities, golf courses, private contractors, the National Research Council and the Ontario Research Foundation, who have contributed financially to the Shade Tree Research Laboratory at the University of Toronto to help fight the Dutch Elm disease. □

## Power plants below sea level

A Swedish inventor sees the world's oceans as a massive hydro-electric plant with unlimited potential, and prophesied that soon electricity will be supplied by underwater power stations hundreds of feet below sea level. Jan Aabom of the Chalmers University of Technology marine division has built and patented an experimental power station model which can produce not only electricity but also algae which could be used for food. □

## Helicopters aiding line project

Ontario Hydro construction forces are taking to the air again to build a new Northern Ontario transmission line.

Two helicopters are being used for pole-carrying and stringing work during construction of a 55-mile power artery to serve Chapleau Township, 100 miles northeast of Sault Ste. Marie. Work on the line, which will connect the Chapleau area with the Great Lakes Power Company's Hollingsworth Falls Generating Station, began recently.

Under an agreement with Great Lakes, Hydro will purchase the power distributed over the new line from Hollingsworth Falls station.

The new 115,000-volt power circuit is part of a $1,100,000 project to meet increasing electrical demands in the Chapleau area. At present customers of Chapleau Hydro-Electric Commission are supplied by small hydro-electric and diesel generators.

Airborne techniques are being used to overcome access problems, but vehicles will assist in construction at either end of the line. A big Sikorsky S-58D helicopter, capable of carrying 12 passengers, will transport the 75-foot poles for the line and set them in place.

A smaller, Bell G2-A helicopter will carry light tools and handle communication and supervisory work. A light-weight rotary air compressor has been developed for drilling work in tough rocky terrain. Weighing about 500 pounds, the compressor can be airlifted by the smaller helicopter.

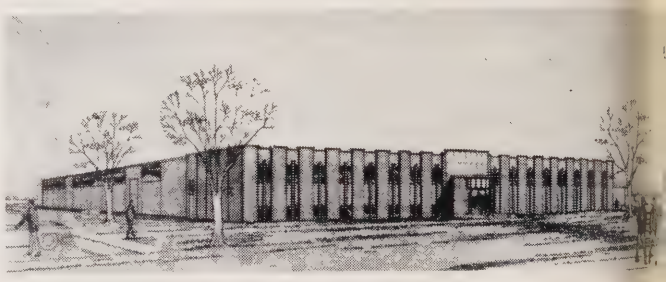


*This big whirlybird is doing the heavy work on a new, 55-mile-long transmission line linking the Chapleau area with Hollingsworth Falls.*

Construction crews will live in camps established at strategic points along the line. The insulated camp buildings are readily transportable and easy to erect and dismantle. Survival tent camps have also been set up along the right-of-way for emergencies.

The Hollingsworth-Chapleau power line scheduled for service by September 1 this year, is the fifth built by Hydro using this airborne technique.

## Toronto Township Hydro building



This is an architect's perspective of the new $400,000 Toronto Township Hydro service building being constructed under the Winter Works program. Reeve Robert Speck recently announced that the building would be completed in May. The service building will enable Toronto Township Hydro to put all its field facilities under one roof. The structure will be of concrete block with a brick front, totalling approximately 54,000 square feet of floor space. It will be electrically heated and air conditioned.

A crane will be installed to handle heavy equipment and all loading will be done inside with an electro-hydraulic lifting machine. Property has also been purchased for the construction of an administration building which will be started late in 1966 or early in 1967.

## Harry P. Cadario dies

Harry P. Cadario, 49, Ontario Hydro's director of Engineering, died suddenly at St. Michael's Hospital, Toronto, March 5.

Born at Kenora, Ontario, he received his early education in Manitoba. He graduated from Queen's University in electrical engineering in 1938 and he joined Hydro's construction staff the same year. He was transferred later to the Engineering Division where he has served since, except for wartime service with the RCEME as a radar specialist.

Since returning to Hydro he has held several senior engineering positions. He was named Senior Project Engineer in 1948 and worked on implementation of the frequency standardization program. He was appointed Director of Engineering in 1961, and in this capacity played a prominent role in the Commission's expansion program.

Mr. Cadario was a member of the Association of Professional Engineers of Ontario, the Engineering Institute of Canada, the Institute of Electrical and Electronics Engineers, as well as the Electric Club of Toronto and the Empire Club.

He is survived by his wife, Dorothy, and two children, Paul 14, and Barbara 12.

## Expo underway electrically

Spring, 1965, has been set as the deadline for installation of the electrical underground distribution system at the Canadian World's Fair, in Montreal so that construction of EXPO 67 structures can begin.

Power will be supplied by Hydro-Quebec, from a substation on the Montreal South Shore, with power cables passing over the Jacques Cartier Bridge. The electrical demand of the entire complex will be in the vicinity of 55,000 kilowatts.

## January energy production

Primary energy provided by Ontario Hydro in January, 1965, totalled 3.89 billion kilowatt-hours, an increase of 7.9 per cent over the same month a year ago.

Adjusted for seasonal influences, primary energy demand in January was 3.51 billion kilowatt-hours, 1.0 per cent more than the previous month.

The seasonally adjusted total for January represents 42.13 billion kilowatt-hours at annual rates. This is 302.8 per cent of the energy demand in 1949. □

# FF THE WIRES

me pretty heady stuff emerged from the t annual meeting of the Holstein-Fresian iation of Canada, which was thrown into confusion by a suggestion from Agricul- Minister Hays. His bombshell — throw udder" competitions open to all-comers dless of breed, color or creed.

one will quarrel with his reasoning when ys an udder is an udder regardless of the of cow to which it is attached. But the ter went further, according to a report in Globe and Mail:

ith all due respect to women and dairy I think the same argument applies with as much validity to some of our beauty sts. I realize that a lot more could be on the subject, but isn't an ankle an ankle, om a bosom, whether the girl is Canadian vedish or from Australia?"

rhaps, but on the udder hand . . . there's ver-all package to consider.

gness has it virtues but it also has its ls and it looks as though Ontario Hydro has ts foot into one of the latter. It has, in threatened to turn the power off on itself. a statement of account directed to the Ther- Generation Department, the area office sup- the first trickle of construction power to ite of the huge Lambton development, im- in very polite terms that unless payment orthcoming promptly, service would be dis- nued. The amount overdue was $5.67.

would be a shame if Canada's largest al-electric project, with a potential of ,000 kilowatts, should founder on its first ic bill. Come on, fellows, pay up and let's n with the job!

the other hand, Hydro picks up a bouquet s billing procedure from Al Rokeby's column e Tillsonburg News.

fter seven years of power bills" (in an- province), says Al "which said 10 per cent st would be charged on all bills not paid date about 10 days hence, and always a r two before pay day, it was a pleasant e to see instead that Ontario Hydro gives discount of 10 per cent if paid before a n date.

old on! I know that the cost is the same, hat a difference in approach. One a stick he other a carrot. If I got two bills from companies and could only pay one before day, the one calling the 10 per cent a unt would get paid and the other could le."

nadians tend to view the month of March variety of ways. To some it means the stirring of sap in the trees with the se of soft summer breezes. Younger and hardy souls may regret the imminent de- of the snow covered slopes and frosty air. see it as a nasty, windy month and prefer to ignore it altogether by heading south.

Few, we fear, associate the third month of the calendar year with one of the greatest international humanitarian movements ever established. March is Red Cross month and if most Canadians are not intimately familiar with the work of this organization, they have cause to be grateful.

Canada has been fortunate and has been spared the great disasters visited upon many




other nations. But we have not been granted immunity and should the need arise, the Red Cross will be there.

Quite aside from national and international emergencies, with which the Red Cross is usually associated, the Canadian Red Cross Society carries out a continuing program of service to the community which is fully deserving of generous support on its own merits. Best known is the free blood transfusion service but others run the gamut from winter safety to outpost hospitals and from first aid to hospital visiting.

This all costs money, of course, and last year's campaign receipts were below requirements — a situation in which we can scarcely take pride.

This month, then, let us dig deep into our pockets for reasons other than warmth. The best protection against the cold winds of March is the warm feeling engendered by our own generosity.

■ For the following illuminating account of the early days of curling in Ontario we must thank The Adminogram, monthly publication of the Administrative Management Society, Toronto Chapter. A mysterious K.C.C. is the author.

"Maybe you didn't know it, but the first curling match in Upper Canada was played by Paul Bunyan and some of his boys on the Ottawa River right where the town of Deep River stands today.

When Scotty MacTavish came over to join Paul on the river drive, he brought along a couple of 50-pound curling stones for Paul to wear on his watch chain. Paul and the boys liked the idea of the game as described by Scotty, so they gathered up some boulders from the bed of the Ottawa River and made handles from twenty-foot crowbars bent to shape and jammed into holes in the rock. Babe, the Blue Ox, did the sweeping with a fifty-foot pine tree lashed to his tail.

Years later, when the Hydro men came to build a power dam at Des Joachims, they found the stones still in good shape but blocking up the river. The Hydro fellows, who have never been known to exaggerate, claim that it took 48 cases of dynamite to break Paul Bunyan's curling stones into pieces small enough to load onto a truck."

If we didn't know curlers, we'd be inclined to take this account with a grain of salt — or barley.

■ The best way of getting things done, in many instances, is to form a committee. But this is not to say that it is always the fastest. Take the case of one college at Oxford, which was built on land acquired on a 999-year lease. They discovered, about two years ago, that 550 of those years had expired and so they appointed a committee to determine what should be done at the termination of the lease.

Of the appointment, Secretary of State Dean Rusk is said to have remarked: "My experience with committees is that it is high time they got at it."

Mr. Rusk, very obviously, is not familiar with the committee work of the OMEA and AMEU. Even their most complex technical problems can be cleared up in less than 449 years!

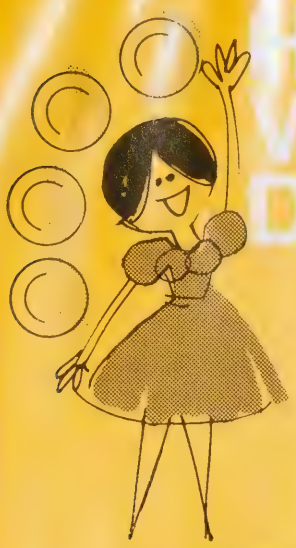
■ A combination of good luck and quick thinking probably saved the life of a sky diver when his chute recently left him suspended from a 27,600-volt feeder line near the Stratford Transformer Station. Operator Archie Ranney watched the chutist's descent from his station. When the sky diver hit the feeders, one opened and reclosed automatically. The other, which is manually controlled, remained open and Archie, deducing what had probably happened, reversed normal procedure and left the line dead.

Swaying back and forth like a rag doll, the unfortunate victim's clothes kept bursting into flame when the pendulum of his swing brought him into contact with low voltage wires on the same pole. He unbuckled his chute before help could arrive and fell 20 feet to the ground without serious injury. □

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# HYDRO WILL DO THE DISHES



**From now until Mother's Day dishwashers will be very much to the fore in appliance outlets across the province.**

Housewives of the province will be invited to "Take a Lifetime Holiday from Dishes" in the latest co-ordinated appliance promotion being undertaken by various segments of the electrical industry.

Sponsored by the Canadian Appliance Manufacturers Association, with the co-operation of the appliance dealers, municipal electrical utilities and Ontario Hydro, the promotion runs from March 1 to May 9 (Mother's Day).

Choice of the electric dish washer for the spring promotion followed careful market analysis which indicated that the saturation of this appliance in Ontario was only 2.3 per cent in 1964. The United States figure for the same year was 9.8 per cent.

Popularity of new appliances in Canada traditionally follows the U.S. pattern, with a lag of four or five years. CAMA considers U.S. experience a useful yardstick, providing that a similar degree of promotion is carried out here in connection with the product. Electrical manufacturers and utilities in the U.S. have energetically stimulated the sale of electric dishwashers over the last few years.

"Take a Lifetime Holiday from Dishes" will be advertised both at the association level and by the individual appliance manufacturers. For their part, Ontario Hydro and the participating municipal utilities will mail attractive four-color billing inserts commencing with the March billing cycle.

In addition, Ontario Hydro is supplying a sample dealer kit and making advertising mats available to participating utilities through its regional offices.

# ONTARIO HYDRO NEWS

APRIL, 1965



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Sir Sandford Fleming helped the world get together on time—page 8

## LOAD BUILDING IS THE GOAL AS HYDRO UTILITIES PICK UP THEIR BRIEFCASES

## THE BUNNY BUSINESS GETS AN ASSIST FROM ELECTRICITY

APRIL, 1965

# ONTARIO HYDRO NEWS

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**THE COVER**

One of the earliest methods of measuring time was the hourglass, used by staff artist Al Waddingham to symbolize the story of Sir Sandford Fleming in this issue. Forgotten by most of us, this remarkable Canadian charted both rail routes through the mountains of British Columbia, designed postage stamps and gave the world the time of day. See "Tinkering with Time" on page eight.

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# BIG BUSINESS IN BUNNIES

## MULTIPLICATION IS STILL THE KEY TO SUCCESS IN RABBIT RAISING *WITH AN ASSIST FROM ELECTRICITY*

OIS LANE

conjures up visions of colored eggs, hicks and chocolate rabbits . . . but nnies in this story are white, fluffy and uch alive . . . at least at the outset of cess.

furry friends, renowned for their mul- prowess, are actually in short com- l supply in Ontario. Rabbit breeders n that they can sell more than are ed. One of the largest rabbit meat dis- rs in the province states that the de- or this delicacy is so great they are ,000 rabbits a week.

ed to be that all one needed to enter bit business was a hutch and two Nature took over from there. But ave changed. The animals still co-operate, of course, but bunnies are now "big business" and there is considerable investment involved.

Reg Hartman, for instance, owner of Hilltop Industries at Clarksburg, near Collingwood, has a large modern clear-spanned structure housing 3,000 rabbits. It measures 33 by 125 feet, is fully insulated and has screened air inlets along the top and bottom of one wall. Additional ventilation is provided by centrifugal electric fans, controlled by thermostats and time clocks, to maintain constant temperature and humidity. Six fan-forced electric heaters maintain the desired temperature.

Mr. Hartman raises New Zealand Whites which are a much chunkier animal than the





ordinary cottontail or domestic hare. His ambition is to market about 14,000 a year and to achieve this each mother rabbit, or doe, will need to produce 200 pounds of rabbit annually. Reg is prepared to assist.

"We are developing an even heavier rabbit by line breeding," he explains. At Hilltop, the daughters are bred to their fathers and sons to their mothers. The problem of keeping track of family lineage is solved by tattooing numbers in their ears. Even the cages are numbered to avoid any mix-up.

The majority of the 288 cages in the Hartman rabbitry are occupied by does (worth $10 each) and their young. "Each doe can produce up to five litters a year and each litter averages from eight to 10 young", Reg says. "But that old girl there," and he pointed to a huge mother with her brood, "had 17 last time."

Each doe's cage has a nest box filled with alfalfa and soft wood shavings. Before birth, the mother plucks the downy fur from her belly and lines the nest with this eiderdown-soft insulation. This combination of the mother's body temperature and the insulation she provides probably accounts for the wild rabbits' ability to survive in temperatures that tumble to 40 degrees below zero.

In the commercial rabbit business, the young are weaned at eight weeks and promptly shipped off to market.

Mr. Hartman, who has been in the business only about two years, makes his own wire cages. These are suspended 24 to a unit from the ceiling. Once the building is filled to capacity there will be nearly 500 cages containing 400 does. Even the metal feed trays which hold the food pellets are made at Hilltop. A continuous water supply is piped into the cages and if disease, the scourge of every rabbit breeder, should hit, medication is added to the water.

Carrots and lettuce, associated with rabbit diets in many minds, have no place in a commercial operation. Breakfast, lunch and dinner consist of pellets containing a carefully balanced and imposing list of ingredients from barley to corn meal and from vitamin B12 to riboflavin supplement.

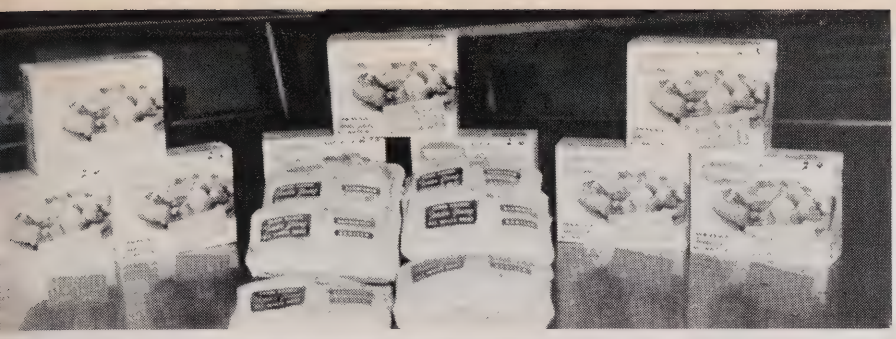
At Hilltop, things are done electrically wherever possible and even the fly problem is to be overcome in this way. Mr. Hartman plans to install electric fly traps. These devices are hung from the ceiling and the fl attracted by a heat lamp which hangs i of a wire mesh network. The mesh is a a series of high voltage electrical con and when the fly hits the mesh, it's instantly.

Hilltop rabbits eventually find their Essex Packers, one of the largest distr of rabbit meat in the province. W influx of many Europeans into Can demand, especially in the Toronto are exceeds supply. And Paul Voke, man the Essex processing plant in St. Cath feels that the rabbit is fast gaining i ability as a table item among nati Canadians.

"It used to be that our largest buye new Canadians of French, English, ( and Italian origin, but now it is imp to distinguish in this way", he says.

The Essex rabbit operation at St arines, employing 13 people, is presen ing anywhere from 1,500 to 2,500 each week from breeders like Hilltop

"Right now we could use 2,000 week", says Mr. Voke. Rabbit meat the retail market from 79 to 89 cents





*Sentiment has no place in rabbit business and bunnies like those, far left, at Hilltop Industries, end up packaged — fresh or frozen. Owner of this modern Clarksburg rabbitry, Reg Hartman, is shown adjusting ventilation system while preparing to weigh some marketable rabbits.*

available both fresh and frozen.
-product of the rabbit is the fur which
l by the packing house and sold to the
nt industry.
present, the felt trade and the hatters
their felt, which consists of 90 per
bbit fur," William Croft, editor of the
ian Rabbit Breeder, points out. "A
cessing plant in Canada would certain-
a lift to the industry."
t packing houses also sell various
f the rabbit to medical laboratories for
mental purposes.
ther by-product, at the breeder's level,
it manure. Added to peat moss and
, it becomes the ideal culture for worm
ation. Right now, Mr. Hartman is
nenting with an electrically-heated
bed, which is thermostatically con-
He has installed heating cable
h the humus and hopes that the heated
ill provide an even better breeding
.
gure I can make just as much money
ms as I can on my rabbits," he says
grin. Reg explains that fishing worms
w in greater demand as they can be sold either frozen, preserved or alive. "The fish don't seem to notice the difference," he says, "although some died-in-the-wool anglers still go for the wiggle."

He also believes that the remaining soil culture can be sold to florists for potted plants.

And so the story goes . . . one venture leads to another. Modern methods of breeding, feeding, and tending are taking over to make 1965 bunnies fatter and healthier than ever.

Electricity is doing its bit in the rabbit business but it is still very much a family matter. It's the doe that brings in the dough. □

## RABBITS AND POSTAGE STAMPS

Some years ago, the American Rabbit Breeders Association collected a number of facts about their proteges and some are enlightening, to say the least. Among them:

- Rabbits have been marketed in Europe for over a 1,000 years.
- There are more than 40,000 rabbit farms in the U.S.
- Each rabbit represents a profit of between $5-$10 for its owner.
- Over 7,000,000 pounds of rabbit meat is sold in Los Angeles County, California, each year.
- The mucilage on all U.S. postage stamps is made from 100 per cent rabbit glue.
- Rabbit feet have been omens of good luck for hundreds of years.
- They have a 31-day gestation period.
- The heaviest rabbit on record weighed 24 pounds.
- Germany kept in World War II longer because of its meat supply from back yard rabbitries.
- Every part of a rabbit can be used for something or other. □

"In the final analysis, sales are won and lost at the customer level".



PHOTOS BY HARRY WILSON

# THE PUC PICI UP THE BRI CAS

by JOAN ALLEN

*Dressed for the Power answers customer's ques before leaving office on a call.*

ou can't see it, it has no smell and if you
n feel it there is something wrong — but
is isn't keeping the utilities of Ontario from
ounting a growing sales effort on behalf of
eir product — electricity.

Aware that the only alternative to spiral-
g rate increases lies in their ability to per-
ade customers to make greater use of elec-
city, more and more of the province's
blicly-owned utilities are picking up their
ef cases and going after business wherever
s to be found. In a competitive situation,
y can no longer sit back and wait for a
ock on the office door.

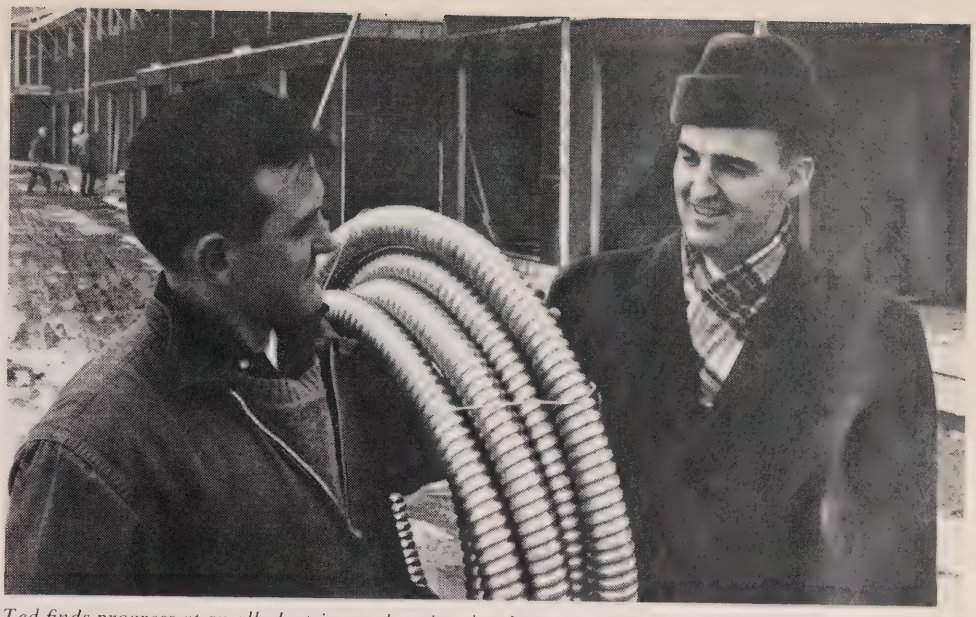
To date, some 50 electrical utilities have
least one man on staff whose primary re-
nsibility is sales. Most are one-man opera-
ns but some include a half-dozen field men,
haps a home economist, and additional
ce help. A few pay a portion of the
ary of the Ontario Hydro area sales and
vice representative in return for his work
hin the municipality. Others share the ser-
es of a full time salesman among them.

The electrical utilities in the province were
t prompted to promote the increased use
electricity by the arrival of natural gas in
ge quantities. Competition from this new
rce of energy began to have a detrimental
ct on the rate of growth of electrical
sumption, which until then had been
ficient to produce a steady reduction in the
t per kilowatt-hour. The most hard-hit
a for Hydro utilities was in the water-
ter market, which represents 35 per cent
evenue from residential customers.

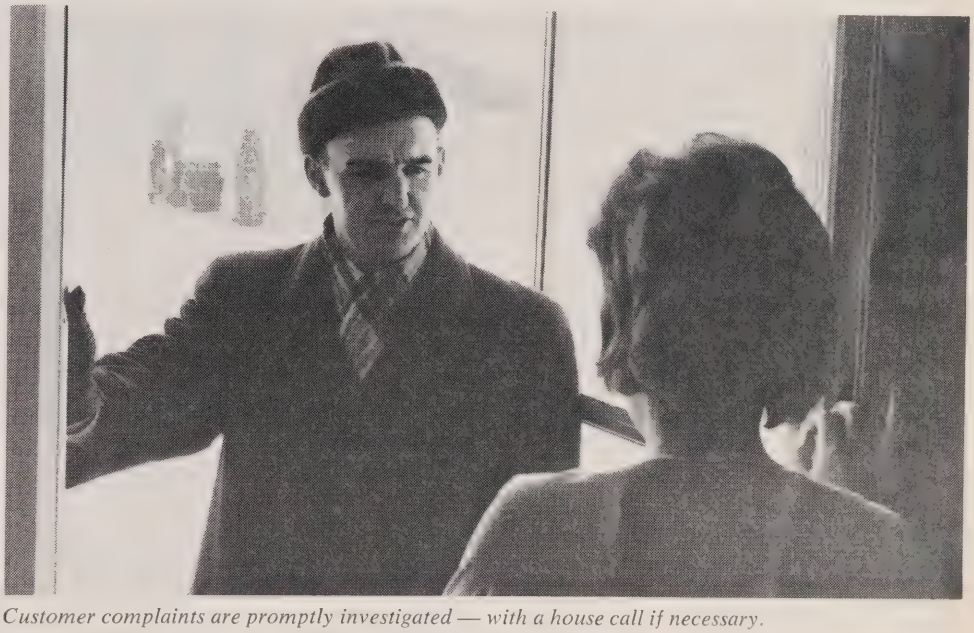
For example, low water heater sales were
chief reason York Township Hydro ini-
ed a sales program in 1960. With little
-housing construction going on in the
ty's service area, 90 per cent of its water
ter sales were in the replacement market.
l the utility was losing more water heater
s than it was gaining. Don MacGillivray,
stant manager — administration, points
that the water-heater load, in terms of
watts, grew significantly during 1964
the largest increase in several years. He
lits sales promotion for stemming the tide.
And we've set a target of 2,000 units for
5," he says. "That's a 25 per cent in-
se over last year's sales."

on heads York Township Hydro's sales
, which also includes Lorne Rennie, pub-
elations and sales supervisor, Ed Cotton,
Medd, and Janet Santolin, a sales clerk.
ntly bilingual, Janet can greet customers
ither English or Italian, an important
in a municipality where 30 per cent of
customers are Italian-speaking. The con-
ation which York Township Hydro
vs for its Italian-speaking customers by
of letters and posters in both English
Italian is typical of the specialized service
h a utility sales staff can provide.

he other major area of utility promotion



*Ted finds progress at an all-electric row housing development in Woodstock is on schedule.*



*Customer complaints are promptly investigated — with a house call if necessary.*



*Here Ted chats with electrician completing electrical service installation.*

is electric heating. Virtually all utility salesmen are graduates of the Electric Heating Association of Ontario's course for electrical contractors, and are therefore qualified to make heat loss calculations for customers. In older municipalities, with little new-home construction, emphasis is naturally on supplementary electric heating and conversions from other forms of heating. In fast growing municipalities, however, the utility sales staff works on a day-to-day basis with builders and customers alike.

Utility salesmen are often graduates as well of training courses in residential and commercial-industrial lighting design, and plant power seminars. As EHA representatives, some also conduct electrical heating courses for electrical contractors, as well as seminars for builders and real estate dealers.

In most cases, utility salesmen work closely with the Ontario Hydro area sales representatives and attend regional sales meetings. By definition, both types of sales representatives are responsible for the promotion of electricity in all fields within their own boundaries.

Most utility sales staffs, and particularly the one-man operations, deal primarily with residential customers.

"Utility men don't get into commercial work as often as they do residential," says Jerry Hennenfent, sales supervisor of Hydro's Northwestern Region. "One man can't be equally proficient in all fields, and the commercial field is very highly specialized.

"Usually the local utility man acts as liaison between Hydro specialists, either in the Region or at Head Office, and the architects and consulting engineers concerned. Such liaison work is in itself very valuable, because the local man always knows the overall picture better than the outsider does".

Bob Bray, of Niagara Falls Hydro, is one exception to this general observation which suggests the tailor-made service a utility can provide for its customers. For several years now he has worked almost exclusively in the commercial field.

Typical of utility salesmen — with one difference — is Ted Power, of Woodstock PUC. Ted's avocation rules out any difficulties about opening a conversation with his customers. He's the playing coach for the Woodstock Athletics and people kid him about hockey wherever he goes.

"Everybody supports the home town team and they stop me on the street to find out what happened in last night's game, or to find out how I think we'll do in the next game," Ted says. "Nobody ever talks to me about the weather."

Ted's been involved in hockey most of his life. A professional for five years, he played for the Chatham Maroons for several years, including the season they won the Allan Cup and toured Russia. At the time he was part of Chatham PUC's sales staff, which he left in mid-1964 to go to Woodstock.

"I find my association with hockey works for the PUC even when I'm talking about the game at a Sports Night dinner of the Kinsmen Club. And my surname reminds people of the product I sell," he says with a grin.

He never misses a chance to talk Hydro at public affairs and the opportunities are many.

Ted oversees all the utility's promotional activities, including the water heater program. Office staff and service personnel handle most of the day-to-day contact with residential water heater customers, but Ted is always available as a trouble-shooter. He also works closely with such local clubs as the Builders Association, is responsible for local newspaper and radio advertising, and makes heat loss calculations for local electric heating installations. One of his current projects involves 41 electrically heated row-housing units.

The present manager of Woodstock PUC, John Rousam, is a champion of utility sales departments. Before moving to Woodstock last year, he was assistant manager at Galt PUC which has its own sales and service department.

"Having a sales promotion man makes a tremendous difference to a utility's sales record," he feels. "Here in Woodstock, for example, we have a very good water-heater record. About 82 per cent of our residential customers have electric water heaters. And thanks to Ted, we ended 1964 with 406 new installations".

Utility sales programs, and the men who administer them, seem to be as individual as the utilities themselves. And this is the chief advantage utilities cite for maintaining their own sales departments. It is simply an extension of the personalized service Ontario utilities are already offering their customers.

One representative put it this way. "We need and appreciate the broad coverage and assistance which comes to us through Ontario Hydro's marketing program but, in the final analysis, sales are won and lost at the customer level. We are the ones on the firing line." □



*Out of the office more than he's in, Ted's typical week includes customer calls, speaking engagements and consultations with potential owners of all-electric homes.*



*An attentive audience, John Rousam, Woodstock PUC manager, listens to Ted's summary of latest industry-coordinated appliance promotion. Dishwasher campaign runs from March 1 to May 9.*



*Even in a Russian penalty box, a playing coach has no chance to relax. Ted was with Chatham Maroons when they won the Allan Cup and toured Europe.*

# TINKERING WITH TIME

by NORM PANZICA

*Sandford Fleming outlines his plan for universal time reckoning at the Canadian Institute, February 8, 1879.*




BY REX WOODS FROM THE CONFEDERATION LIFE COLL



## CANADA'S SIR SANDFORD FLEMING GAVE THE WORLD THE TIME OF DAY

time anybody says you don't know the of day, tell him he doesn't either. As rned article in the Journal of the Royal nomical Society once pointed out:

Vhat time is, of course, nobody knows ortunately, this is no handicap. All that cessary is to be able to measure time."

easuring time now is pretty simple — ice it neatly into seconds, minutes and . But it wasn't always so, and even we do a bit of juggling with time, ly late in April, when most Ontario cipalities turn their clocks ahead one and in the fall when they are turned

en have been trying to measure or d time since they conceived it. Fortun- mornings came regularly, as did the full , so men notched sticks, piled stones vatched the position of the shadows they for an indication of the time of day. ks were "invented" several times, but rst mechanical one is credited to Gilbert, nk, around 995. Late in the 19th Cen- an electric clock appeared, but these t come into wide use until about 1930.

the R.A.S. Journal indicated, measuring really hasn't been too troublesome — g together was the problem. Every village and city had its own time, de- d as an ingredient of local pride.

en came the iron horse and telegraphy, ing the continent to size and making the disagreement an urgent problem. Chang- rom one train to another was risky at since the various railroads had their own of what time it was — and in all prob- the towns they served had others.

ne was really in a muddle when Sand- Fleming came to Canada from Scotland 45 — attracted by the challenging rail- development program then underway. n his teens, and determined to become l engineer, he actually became a giant anadian railroading — and gave the the time of day.

ming, who married a Peterborough vas a well known figure by 1871 when came the CPR's chief engineer. He help- m the Royal Canadian Institute, wrote s on a variety of subjects including blindness, and at 24, designed Canada's first stamp, an 1851 three penny beaver.

As trains brought urgency to agreement on time, and brought Fleming to Ontario, they also impressed him with the absurdity of existing time-keeping procedures. On a trip from Halifax to Toronto, he had to change his watch five times. He later found there were 75 "times" in American railroading. "Time," Fleming wrote in 1875, "must start from someplace." And he would see that it did.

But laying a row of time zones, he learned, was to be much trickier than laying railroad tracks. He was, however, a hard man to stop.

Skepticism, local jealousies and other opposition were no match for the man who surveyed the steel west from Fort William and brought the rails through Kicking Horse Pass to explode the theory that a railroad through the Rockies was an impossibility. He had first surveyed and advocated the Yellowhead Pass, later followed by the CNR. The same man held prayer meetings with the track gangs and once attended a formal dinner in home-spun trousers and a red flannel shirt.

Always practical, Fleming entitled his 1876 treatise "Memoir on Terrestial Time" the regulation and measurement of time on earth where men had to contend with it. He read the paper at the Royal Canadian Institute, circulated it, lectured and lobbied and wrote letters.

His work added impetus to the gradual coming of railway time standardization, finally achieved in North America in 1883.

Noon glides across the earth from east to west, so it seemed logical to Fleming that time around the world should be based on zones like the sections of an orange: obviously there would be no "east and west" at the poles of the earth.

Where would zero be in this global scheme?

Local pride at the municipal, national and continental levels reared its many heads, and the fight was on. But Fleming's plan had the merit of logic: 24 slices or zones, each 15° wide at the equator to make up the 360° of a planet using 24-hour days. Agreement was reached by many nations at a meeting in Washington in 1884. The Universal Time System began January 1st of the following year.

Greenwich, England, was to be zero, its borders seven and a half degrees away on either side. Sandford Fleming had induced the world to get together on something vital; some say he earned his knighthood for this alone.

The system did and does work fine. Ontario, for example, is on Greenwich-minus-5-hours time.

Manipulating time, however, isn't over yet. To the dismay of dairy farmers, England brought in Daylight Saving Time, in 1916, which "delays" sunset just by setting the clock ahead one hour. In 1918, both the U.S. and Canada imported DST, the latter making it compulsory until after World War One.

A boon to golfers, swimmers and office workers with gardens, DST is no joy to dairy farmers, poultry raisers and parents trying to get children to bed. There is no national law, and Ontario has neither legislated it in or out of existence: it's local choice.

Just as the exact lines of longitude were modified a bit in setting time zones to suit political boundaries, the use of DST is decided by local need. Windsor, for example, doesn't use it because Michigan doesn't. Many rural communities ignore it.

Railroads go by standard time all year, but often a train leaving at 7 p.m. Standard Time will go at 7 p.m. Daylight Time because the "summer schedule" calls it 6 p.m. Air lines use local time in their schedules (which can make a Toronto-Windsor summer flight seem ultrasonic).

Daylight Time brought Toronto Hydro the first drop in annual peak demand since the height of the depression, but at a time when the utility welcomed such a dip: 1940.

About a month before the end of 1940's daylight-saving period, it was decided to continue it indefinitely. The idea that more daylight would release vital electricity to war industry paid off: the winter of 1940-41 saved Ontario an estimated 85,800 kilowatts — simply by turning clocks ahead to change the peak.

Toronto and other cities voluntarily went on year-'round DST, and by June, 1942, it was compulsory across Canada under the War Measures Act. The U.S. and Germany did the same. In Canada, the order-in-council was revoked in September, 1945.

Sir Sandford Fleming died in Halifax in 1915, a year before DST appeared in England. Whether he would have approved can only be guessed, but in its use as a war measure, he would surely have concurred. □

# WINGS OVER THE WORLD

by JOHN HOWARTH







*Smiling trio, above, greeted Hunting Survey crew during photographic mapping assignment for the federal government in the Arctic. Photos, right, were taken during Canadian Colombo Plan survey of Mekong River in Laos.*





*o photo shows Hunting map-maker piecing together a mosaic for a mining company. hnicians, above, are conducting a magnet- ometer survey over the Pacific for Dom- ion Observatory during Geophysical Year.*

Somewhere over Pakistan a few years ago a pilot glanced along his wings and noticed they were full of holes. Looking below he discovered that a band of Pathan tribesmen were firing rifles at him.

Both pilot and plane were from Canada and their mission was a peaceful one — an aerial photographic survey for the Pakistan government.

Not all of the assignments taken on by the small but highly regarded group of Canadian aerial survey companies are as melodramatic, but they are no less exciting. Together, these adventurous firms have blazed a trail in world skies which is universally recognized and respected.

Largest of the group is the Hunting Survey Companies. Like the others, its beginnings were modest. Just after the war, an Englishman named Douglas Kendall decided to turn the techniques he had learned interpreting photographs of enemy territory to peacetime use. Setting up shop with three battered wartime aircraft and a few Canadian and British air force veterans, he went to work.

From a cold start and an office converted from a wartime cafeteria at Toronto's Downsview Airport, Douglas Kendall built Hunting into one of the largest map-making and natural resources survey companies anywhere. Today the company has offices in Toronto, Montreal, Calgary and Vancouver as well as associate companies in Rochester and New York. They can point to more than 50 countries on the map where assignments have taken them — areas as far flung as Argentina, Ceylon, Somaliland, Bolivia and the Caribbean. Closer to home, they have surveyed a goodly percentage of Canada's natural resources.

Hunting now has more than 200 employees of which about one fifth are professional scientists and engineers — geologists, geophysicists, foresters, agriculturists, physicists and civil engineers.

The company's air force consists of more than a dozen specially equipped planes — everything from converted World War II "Flying Fortresses" to modern Aero Commanders and Sikorsky helicopters. These, and a bewildering assortment of modern equipment, are the tools used to map out a transmission line, assess an area's natural resources, prove a microwave path, survey an oil pipeline or do an airborne geophysical survey — just a few of the company's many activities. Contracts may be worth as much as $3 million or as little as $300, and some have taken four or five years to complete. Clients range from municipal and federal governments to mining companies and power utilities. Hunting experts have even advised people on the proper location for a summer cottage or the layout for a golf course by analyzing existing aerial photographs.

Complex and varied work such as this takes the finest equipment. If the equipment isn't available, Hunting designs it. They have a list of important survey and photographic equipment to their credit.

One of the most outstanding is a revolutionary technique called orthophoto-planimentry — a high sounding name for a high flying solution.

In simple terms it is an economical way of solving problems of terrain deformation or distortion which crop up in aerial surveying. Older techniques resulted in line drawings which, though accurate, lacked the useful detail recorded by the aerial photograph. To retain the detail, mosaic techniques were often used — combinations of many smaller photos to give a composite picture of a larger area. But these were not always accurate.

Using specially designed equipment known as the "stereomat automatic plotter", the new technique solves the problem by rendering distances and angular relationships between details with complete accuracy, and in constant scale.

Incorporating a patented electronic system and thousands of tiny computerized circuits, the stereomat provides an entirely new



basis for operations where absolute accuracy of ground detail and their relationships is necessary.

Hunting is among those aerial survey companies whose services are being utilized by Hydro from time to time.

Among the most recent of these assignments was mapping the vertical face of the Niagara gorge above the Ontario power plant where rock falls pose a potential danger. The plan here is to obtain cumulative contours every two years by terrestrial photography in order to measure the rate of rock decay.

Other unusual aerial tasks assigned to the company by Hydro have included surveys over the turbulent upper Niagara rapids in connection with shoal removal and the determination of current velocities at the entrance to the Niagara River prior to the positioning of the ice boom.

Most significant of the Hydro projects as far as Hunting is concerned, is the plan and profile recently carried out of a section of the EHV transmission line between Essa Kleinberg. Conducted on a test basis to c pare cost and accuracy with ground meth the results were encouraging in the extr

As Hunting sees it, there is a promi future for transmission line route ana and tower location by means of photo matic procedures in conjunction with c puter techniques. The firm reports suc with these methods in Quebec and envis a growing acceptance.

And so the story goes in the aerial su



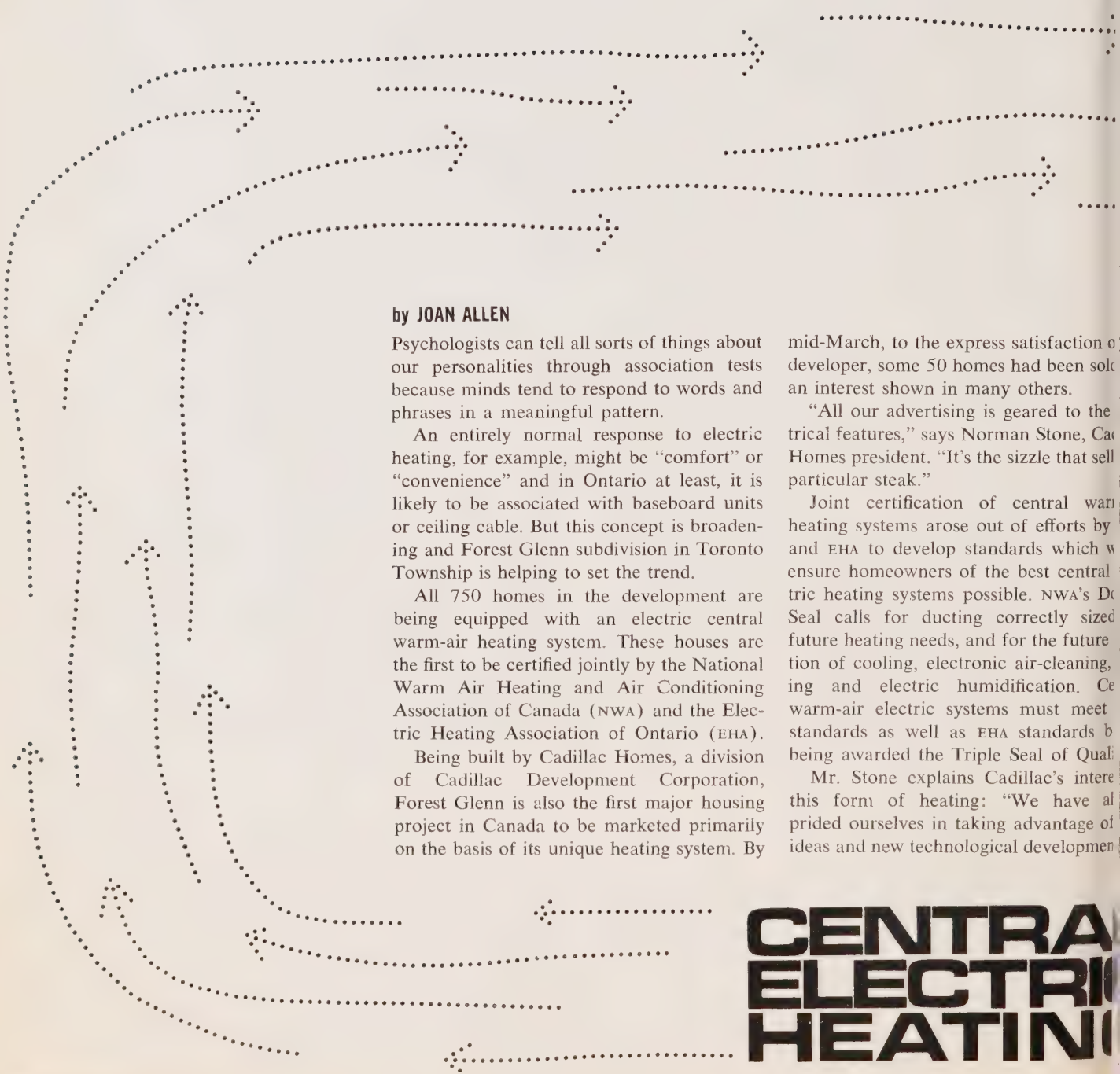
ss. Whether the next assignment in- determining the best location for a permarket, or a flight halfway 'round rld, Canada's airborne surveyors will he job.

ing from scratch, these companies are a new chapter to the epics written by the bush pilots who opened up the an North. In a technological age, the eed is developing improved methods ping the world and bringing its natural es to light. □

*Hunting photographs Metro area each year on a speculative basis. Tiny areas can be pinpointed and enlarged for various purposes. Above photo of Toronto International Airport was derived from a section of a 9" x 9" negative enlarged five times.*

# *ANOTHER STRING TO OUR BOW

These systems round out the electric heating industry's product line.



by JOAN ALLEN

Psychologists can tell all sorts of things about our personalities through association tests because minds tend to respond to words and phrases in a meaningful pattern.

An entirely normal response to electric heating, for example, might be "comfort" or "convenience" and in Ontario at least, it is likely to be associated with baseboard units or ceiling cable. But this concept is broadening and Forest Glenn subdivision in Toronto Township is helping to set the trend.

All 750 homes in the development are being equipped with an electric central warm-air heating system. These houses are the first to be certified jointly by the National Warm Air Heating and Air Conditioning Association of Canada (NWA) and the Electric Heating Association of Ontario (EHA).

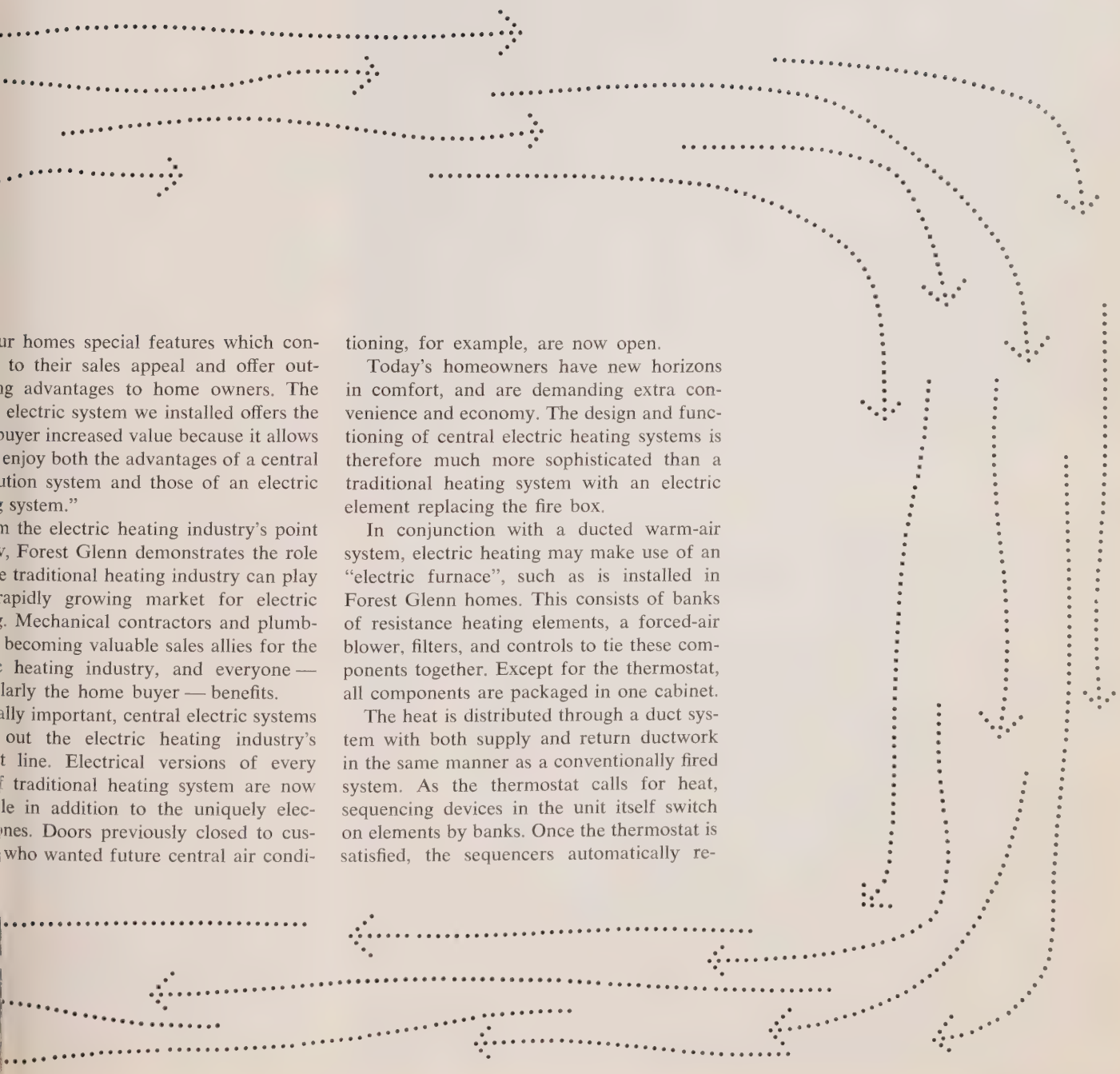
Being built by Cadillac Homes, a division of Cadillac Development Corporation, Forest Glenn is also the first major housing project in Canada to be marketed primarily on the basis of its unique heating system. By mid-March, to the express satisfaction o developer, some 50 homes had been sol an interest shown in many others.

"All our advertising is geared to the trical features," says Norman Stone, Ca Homes president. "It's the sizzle that sell particular steak."

Joint certification of central war heating systems arose out of efforts by and EHA to develop standards which w ensure homeowners of the best central tric heating systems possible. NWA's D Seal calls for ducting correctly sized future heating needs, and for the future tion of cooling, electronic air-cleaning, ing and electric humidification. Ce warm-air electric systems must meet standards as well as EHA standards b being awarded the Triple Seal of Quali

Mr. Stone explains Cadillac's intere this form of heating: "We have al prided ourselves in taking advantage of ideas and new technological developmen

CENTRA
ELECTRI
HEATIN



ur homes special features which con- to their sales appeal and offer out- ng advantages to home owners. The electric system we installed offers the buyer increased value because it allows enjoy both the advantages of a central ution system and those of an electric g system."

n the electric heating industry's point v, Forest Glenn demonstrates the role e traditional heating industry can play rapidly growing market for electric g. Mechanical contractors and plumb- becoming valuable sales allies for the heating industry, and everyone — larly the home buyer — benefits.

ally important, central electric systems out the electric heating industry's t line. Electrical versions of every f traditional heating system are now le in addition to the uniquely elec- nes. Doors previously closed to cus- who wanted future central air condi- tioning, for example, are now open.

Today's homeowners have new horizons in comfort, and are demanding extra convenience and economy. The design and functioning of central electric heating systems is therefore much more sophisticated than a traditional heating system with an electric element replacing the fire box.

In conjunction with a ducted warm-air system, electric heating may make use of an "electric furnace", such as is installed in Forest Glenn homes. This consists of banks of resistance heating elements, a forced-air blower, filters, and controls to tie these components together. Except for the thermostat, all components are packaged in one cabinet.

The heat is distributed through a duct system with both supply and return ductwork in the same manner as a conventionally fired system. As the thermostat calls for heat, sequencing devices in the unit itself switch on elements by banks. Once the thermostat is satisfied, the sequencers automatically re-



*W. E. Wright, Toronto Township Hydro chairman, is shown above with Dave Voyce, sales supervisor, right, examining central electric furnace at Forest Glenn subdivision. Below, they join underground foreman Harvey Thomas inspecting construction of subdivision's electrical system.*





*In merchandising subdivisions, Ca likes to combine variety and q in its home with new technologic vances. At Forest Glenn, c electric heating is a strong selling*

verse and drop out the heat banks on time to maintain even temperatures.

Preston Public Utility Commission i ticularly enthusiastic about this form o tral heating system. A few months a utility helped a local manufacturer intr its first electric furnace line. George PUC chairman, feels this decision l established manufacturer of traditional ing equipment to enter the new field d strates the versatility and widespread a ance of electric heat.

Another form of central electric h known as the zoned central system. It h same basic components as the furnac only the blower and filters are locate central unit. The heating elements are l in branch trunk ducts, register boots, o vidual runs leading to specific rooms or of a building. Under individual therm control, each element comes on wh heat is required.

A third central system — with su cooling as a built-in bonus — is th pump. It operates on the same princip household refrigerator. The chief diff is that the heat pump supplies heat re from the outside air, while refrigerati







PHOTOS BY RON BROWN

heat from the cold-storage compart-
The heat obtained from the outside air
en at below-zero temperatures it con-
neat — together with the heat output
e pump's compressor, is delivered to
nser coils and then circulated through-
e building, usually by means of a con-
nal warm-air distribution system.
the heat pump is used for summer
g, the cycle is reversed and heat is with-
from the inside air by the compressor
scharged outdoors.

ıtral warm-air electric heating systems
nemselves to a number of special appli-
s in the new home market. In large
requiring additional humidity, for
le, a power humidifier can be tied into
ntral duct system under the control of
idistat. Central systems can also solve,
least alleviate problems of allergies or
ıtory diseases by a combination of close
ity control and electronic filtering of
circulating air.

st important, perhaps, electric warm-
tems allow complete year-'round temp-
e control, since central air-cooling
nent can be installed originally or
me in the future. This feature, in fact, is the central system's chief selling point in the United States, where it has become increasingly popular during the past few years. Central warm-air electric heating systems are no more complex than conventionally fired ones, and are as economical to install. They operate at exactly the same cost as a baseboard electric heating system of equivalent capacity.

Heat pumps provide all the advantages of other central systems, with the bonus of a complete air-cooling system as part of the original installation. Heat pump costs are competitive with those for a conventional heating and air conditioning system.

Electric heating can also be used in conjunction with hot-water distribution, or "hydronic", systems. Units vary in size from a small water-heater to the size and shape of a large attache case, and can be concealed in an area no larger than a clothes closet. Water is heated by resistance immersion elements, and is circulated by a pump.

In commercial and industrial applications, electro-hydronic systems are being used for storage heating in conjunction with off-peak power. If off-peak power were to become generally available for residential heating as well, these systems would gain increased importance in the residential market.

Like all central electric systems, electro-hydronic systems are particularly suited to the conversion market. Cost of replacing a conventional hot-water heating system with an electric one is usually lower than with a conventional replacement unit.

The virtually untapped conversion market promises to be the most challenging for central electric systems. With relatively little promotion, an impressive 15 to 17 per cent of the electrically heated homes recorded during 1964 were conversions. By 1967, an estimated 30 per cent of electrically heated homes will be conversions. Even then, only a corner of this prime 250,000-home market will have been reached. (See *Hydro News*, Jan. 1965)

The electric heating industry now has a complete product line and the support of a major segment of the traditional heating industry. An increasingly larger percentage of new homes built are electrically heated each year, and with special promotions planned for 1965, the conversion market promises to open up appreciably.

Electric heating is on the move. □

# CUTTINGS FROM CHRYSANTHEMUMS

## ..mum is the word but electric lights are deceiving the plar



Switching the lights on in the middle of the night with no one around but chrysanthemum plants might not seem very bright but it's actually enlightened horticultural practice. For electric lighting does much more than enable work at the modern "mum" farm to continue after dusk.

Used at the proper intervals, lighting prevents the budding action of young chrysanthemums so that they produce side shoots from which new plants are raised. These cuttings take root when planted and as young plants are sold to growers who bring them to flower.

"The mum is known as a 'short-day' plant because it responds to the length of day," explains Ron Mildner, plant pathologist at Atkin's Flowers, Leamington, a major Canadian producer of chrysanthemum plants. "The trick to preventing budding is to ensure that the plants are not left in darkness for periods longer than five hours.

"Light, either natural or artificial, triggers a chemical reaction in the plant which prevents the function of a hormone in the leaf tips from initiating budding."

Atkin's Flowers, which sells plants across Canada, uses electric lighting both in the field and in its glasshouses. The company has a total of five acres in mums at Leamington, three of them under glass.

The plants are grown outside durin normal growing season. Only in July, there are sufficient hours of daylight to budding, is supplementary lighting not sary.

Rows of 300-watt incandescent globe suspended 10 feet above the plants to pr the additional lighting. Fluorescent lig also used in some of the glasshouses.

During the winter, Atkin's Flowers su ments its glass-houses production by gr five outside acres in Florida, where it us same lighting technique.

Life span of the producing plants proximately 20 weeks, and it takes abo days for the cutting to root. Atkin's Fl produces over 450 varieties of mum, of which have been developed on the fa

Mr. Mildner says that the chrysanthe is today challenging the rose as the nu one flower in Canadian popularity. Eacl the company ships out approximately 000,000 mum plants as well as lesser nu of other types.

And the moral implications of fo plants electrically into producing cu rather than buds?

Says Jack Atkin, a director of the pany: "It's something akin to deceivin chickens with artificial light for extra eg

*Fluorescent lighting is used extensively in this modern "mum" farm at Leamington.*

# GAMMA GREENHOUSE

## nd nuclear energy is changing their genes

by PAUL CHISHOLM



"Jean-changing" time, down on the farm, doesn't necessarily mean doffing the faded blue denims at the end of a hard day's work. For the "jeans" you hear of may be "genes." And structurally changing the composition of these living cells in plants by means of radiation is opening up vast new horizons in agricultural crop improvement.

Canada, a pioneer in using nuclear energy for producing electricity, the treatment of cancer, food storage and a variety of industrial applications, is again to the forefront in this comparatively new science. Much of the work is carried out in a "gamma greenhouse" at the Federal Department of Agriculture experimental station at Harrow, 20 miles west of Leamington.

A prime function of the station's Cesium-137 radiation unit is to induce mutation in plants by bombarding them with gamma rays. Mutation — the changing of hereditary characteristics — occurs in nature at the rate of less than one in 10,000. With radiation the rate can be as high as one per cent.

Plant irradiation induces heritable changes, some of which are desirable from Man's point of view. The object might be to bring forward disease resistance in plants or develop strains of fruit, vegetables or grain which mature earlier or later in the season. Other reasons include increasing crop yields, developing species to suit the climatic conditions of particular areas, or disturbing natural growth factors of fruits or vegetables for a particular purpose—such as dwarf varieties.

"Radiation is simply a new tool in the science of improving crops," states Dr. G. M. Weaver, head of the Horticultural Crops section at the Harrow station. "The possibilities it opens in plant breeding might be compared to the use of a new drug in medicine."

Most of the work at the station's radiation facility, which was built four years ago, has been with chrysanthemum, peach, pear, tomato and tobacco plants.

A critical factor in exposing plants to radiation is calculating the dosage required. This varies from one species to another and even between varieties of the same species.

Dr. Weaver admits that the process of inducing the desired effects in plants is to some extent on a hit-or-miss basis. Chances of improvement through radiation-induced mutation are increased by the use of special screening methods.

The experiments are also painstaking. For instance, a project to eliminate canker disease in peaches, the major problem in Ontario production, began in 1961. Only last season did the first plants to be irradiated develop to the stage of producing fruit.

The changed characteristics of these young

*Cesium-137 radiation unit, background, is producing interesting results at Harrow.*



*Dr. G. M. Weaver heads Horticultural Crops section of Harrow experimental station.*

trees — and those of others which will be brought forward in the years ahead — are subject to constant analysis. It will be at least another ten years before any improved strain which may develop from these experiments is in the hands of commercial growers.

Another project at the agricultural station is the development of a tomato variety which will be free from the ravages of tobacco mosaic virus which attacks the leaves and fruits. In one approach, a tobacco species, which is immune to the disease, is being crossed with a tomato plant in an attempt to transfer the disease-resistant gene. Far from producing a tomato-flavored tobacco, the seedlings which develop from this hybrid are irradiated to produce the ultimate tomato plant.

Apart from its role in mutation, radiation can also stimulate plant growth, according to Dr. Weaver. "The effect may be similar to that produced by ultrasonics where the irritation excites growth."

Irradiation then, is expected to make an important contribution in the challenge of feeding the world's rapidly-expanding population. In Ontario, the development of strains of fruits and vegetables which will thrive in spite of disease epidemics and adverse climate is of increasing importance. Grains which will provide bountiful crops in northerly areas will undoubtedly be sought for the same reason.

The development of fruit and vegetable strains which will mature either earlier or later in the season than at present would help lessen Canada's needs to import produce, says Dr. Weaver.

Irradiation of produce for prolonged storage would also help make Canada more self sufficient in this regard. Recently the first plant in Canada for potato irradiation was opened in St. Hilaire, Quebec. □



*Tobacco plant is being crossed with tomato plant in an experiment to transfer disease-resistant genes.*

# ALONG HYDRO LINES

## clear Conference in May

nadian Nuclear Association is holding its fifth annual conference in c City, May 10, 11, 12. Among the features of this international meet- ll be status reports on Canadian nuclear projects. J. W. Beaver of o Hydro will discuss NPD and Douglas Point. Mr. Beaver has recently ppointed assistant superintendent of NPD. The new Pickering project discussed by C. E. Beynon of AECL Power Projects.

r highlights will be the "World Forecast of Nuclear Capacity to 1985", B. Merlin, of AECL, and "World Nuclear Markets and the Canadian ent Manufacturers" by G. W. Clayton, of H. G. Acres Company. A. of Ontario Hydro will present a brief entitled "Air-Conditioned Living tic." An after-dinner speaker will be the Hon. Jean Lesage, Premier bec. □

## EU Equipment Display

han $3,000,000 worth of construction equipment used by electrical s will be displayed in Etobicoke Township next month during the regular exhibition of its kind in North America.

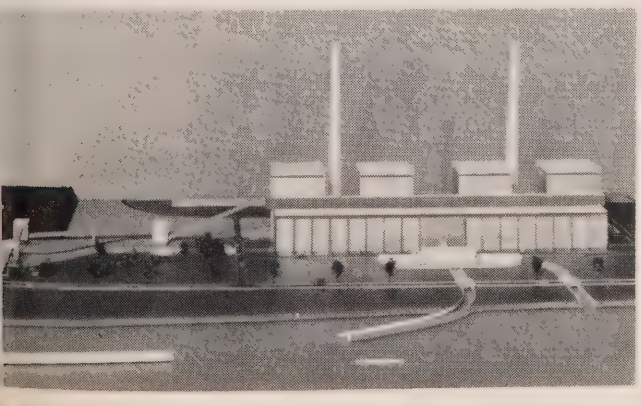
nsored by the Association of Municipal Electrical Utilities of Ontario, peration with Ontario Hydro, the two-day display and demonstration en at Hydro's A. W. Manby Service Centre, Kipling Avenue, on May er 1,000 utility representatives from across Canada and the United are expected to attend.

. Brownhill, of Niagara Falls, chairman of the AMEU's vehicles and uction equipment committee, reports that 50 suppliers whose equip- is available in Canada have accepted invitations to exhibit. Equip- s restricted to "the major tools used in the construction and main- e of the distribution systems of electrical utilities."

Brownhill said that the exhibition, which is held every two years, s technical and managerial personnel from utilities across the prov- nd elsewhere, to view the latest developments in specialized con- on and maintenance equipment at a single location. Ontario's electrical s alone spend between $3,000,000 and $5,000,000 annually on new ent of this type. □

## nbton GS Model

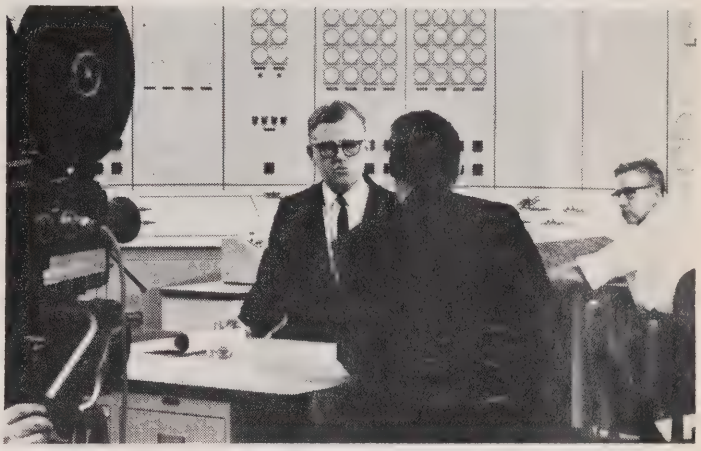
nodel of Ontario Hydro's new coal-burning Lambton Generating Station arnia shows the thermal giant as it will appear when completed in Actual construction of the 2,000,000-kilowatt plant on the St. Clair n Moore Township will begin this summer. Coal carriers will discharge at an unloading dock (lower left). Conveyor system will carry coal to orage area (upper left) and thence to the plant. Narrow white lines indicate route of Highway 40 which parallels the river near the plant site.



The water intake, (middle foreground), will provide some 30 million gallons of water an hour for steam and cooling purposes. The water will be returned through the discharge channel, right of the intake. The main powerhouse building housing the four generating units will be 930 feet long.

Preliminary work, including extensive investigation at the St. Clair River site, as well as site studies and construction planning, is proceeding on schedule. Construction of workshop facilities, site grading and excavation will start early this summer. The station is scheduled for initial operation in 1968. □

## TV Probes Low Water Levels



Great Lakes low water levels and their effect on power production is one of the problems discussed on the TV program, Toronto File, by Robert Boyer, MPP, second vice-chairman of Ontario Hydro. He is shown, left in photo, with interviewer Ed McGibbon and a power supervisor at the Richview Control Station. Mr. Boyer has been the Ontario government's representative at international meetings called to deal with the low water level problem. The program was shown on CBC-TV late in April. □

## New Sales Director



Donald A. Ramsay, 41, has been appointed director of sales for Ontario Hydro. Formerly manager of residential sales, Mr. Ramsay will direct Hydro's province-wide sales program.

He succeeds W. Roy Harmer who died in February.

A native of Timmins, Mr. Ramsay graduated in electrical engineering from Queen's University in 1946, and immediately joined Hydro's junior engineer-in-training program. During the next 13 years, he held a number of positions including those of manager of the Windsor and Forest rural offices.

In 1959, he was appointed consumer service and sales engineer in London. He moved to Toronto in 1963 when he was named municipal service engineer, and became manager of residential sales in March, 1964. □

## A Healthy "Infant"

In a recent report to the Eastern Zone meeting of the Canadian Electrical Association, I. S. Widdifield said that the estimate of 120,000 electrically heated homes in Canada by 1970 was conservative. Comparing the results of utility surveys conducted in 1960 and 1964, he reported an increase of 181 per cent in these homes in the four-years — from 11,900 to 33,457.

"From our examination", he said, "the diagnosticians believe the baby, electric heating, to be in an excellent state of health, gaining and developing exceptionally well with every indication of growing up to be a well formed mature adult of whom this nation will be proud." □

## CNIB Lauds PUC

Scarborough PUC was praised recently by the Canadian National Institute for the Blind for its co-operation in alerting its 70,000 customers to what is believed to be the most highly organized eye-testing survey in North America.

To combat glaucoma, a disease of the eye which can result in gradual loss of vision and ultimate blindness, a detection clinic, sponsored by the

CNIB, the Scarborough Department of Public Health and the Scarborough Medical and Surgical Research Foundation, has been set up to test people during the month of April.

The utility has helped the survey during the past two months by mailing notices and appointment cards out with Hydro bills. A CNIB spokesman reports that the response to the mailings has been exceptional. "This acceptance wouldn't have been so great if it hadn't been for the co-operation we received from the Scarborough PUC", he said. □

## New Sales Manager



G. K. F. Pepper, 38, of Toronto, has been appointed manager of residential sales for Ontario Hydro, effective May 1. Mr. Pepper is sales superintendent for Central Region.

In his new position Mr. Pepper will be responsible for planning and developing Hydro's residential sales program throughout the province.

Mr. Pepper graduated in 1948 from the University of Toronto with a Bachelor of Applied Science degree in engineering physics. He joined Hydro in May, 1948, as a junior engineer in the Electrical Engineering Department and in 1950 became assistant plant engineer for the conversion of substations under the frequency standardization program.

He was appointed consumer service supervisor in Toronto (now Central) Region in 1952 and served as consumer service superintendent from 1956 until 1959 when he assumed his present post. □

## Ontario Advisory Committee

George Gathercole, first vice-chairman of Ontario Hydro, has been appointed to the Ontario Advisory Committee on Confederation, and will be one of the 18 member group which will advise the government on its relations with the other provinces and the federal government. The committee will also be consulted on present and future constitutional requirements in relation to other jurisdictions and prepare opinions on specific questions which relate to these requirements.

Premier John Robarts said future requirements for the province in connection with the British North America Act would be studied. He emphasized that certain goals and objectives in the fields of biculturalism or multiculturalism and bilingualism must be attained.

"We must examine the whole basis of our federalism in order to find areas of, and make arrangements for, improved consultation and communication between the federal government and the provinces in order that we may develop a high degree of integrated policy," the premier said. The effect of opting out arrangements would be assessed and the broad area of economic planning covered. □

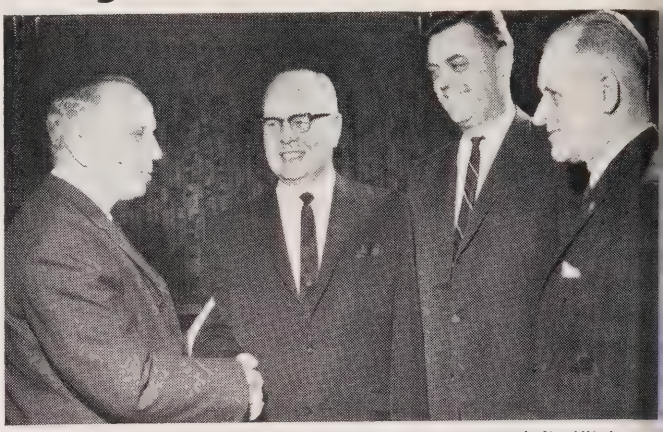
## Leamington PUC in PR Picture

Three Leamington winners of the public speaking contest sponsored by Ontario Hydro and the Ontario School Trustees' and Ratepayers' Association received their awards from the Leamington PUC recently. Charles Howdon, commission chairman, presented prizes to: left to right, Bernadette Wharton, Brian Kipping and Robert Wilson. Robert later qualified to represent his area in the finals, which took place April 19, in Toronto.

Forty-two finalists were selected from some 300,000 elementary and secondary school contestants throughout the province. Ontario Hydro C man W. Ross Strike presented the awards at the conclusion of the f and first prize winners repeated their speeches at a banquet the next All finalists spent a day at Niagara Falls as guests of Hydro.



## Changes at Kitchener



It was congratulations all around as Delton Kissner, left, Kitchener chairman, complimented Alford Thaler, Rudy Senyshen and Howard B on their new positions with the commission. Mr. Thaler has been appo general manager of the PUC, filling the post left vacant by S. E. Pr who died in November. Mr. Thaler had been assistant general manager b his promotion. Mr. Senyshen will continue as chief engineer but als comes second-in-command in the administration. Mr. Becker, a commi employee for 43 years, has been named secretary-treasurer.

# MUNICIPAL BRIEFS

**Electric heating** is beginning to have an impact on the thinking of prospe Sault Ste. Marie homeowners. The local utility announces that 135 h are electrically heated.

**William Hancock**, a Galt PUC commissioner for the past nine years, recently. He had been a member of city council for six years and in Ja had been chosen Galt Citizen of the Year. Very active in community a he was a staunch supporter of the Salvation Army by whom he was recently for exceptional service. Mr. Hancock, who was a senior parti a law firm and an honorary member of the Law Society of Upper Ca was one of the founders of Renison College, a faculty of the Univers Waterloo.

**What's in a name?** According to the Sarnia Observer, anywhere from to $500. That's the amount a private bill in the Ontario Legislature cost to change the name of the Sarnia Hydro-Electric Commissior possibility of the change had been under consideration by the comm due to the difference in the name appearing on letterheads and the u seal. Officially, the utility's name is the Hydro-Electric Commission City of Sarnia, but was shortened to the present title years ago. Co sioner Jack Church is quoted as saying, "It will be cheaper to c our letterheads."

**Progress and determination** were expressed in a year-end letter f Georgian Bay Region from Hugh Lynn, sales representative, Owen PUC.

"As the year is nearing its end, I thought you would be interested competitive heating growth for 1964. Of 48 residential buildings, 2 electric, 3 are oil and 21 are gas. This gives us 310 kw of heating. are nine conversions with a connected load of 94 kw. Supplementary h added 49 kw. We managed to have our hot water (heaters) installed of the 21 gas homes. The commercial picture isn't as bright, wi dominating the scene. A little extra effort on my part will be needed direction."

**M. J. Owens** has retired from Elmira PUC, after serving 17 years commission. He was chairman from 1949 to 1959.

**Robert Hanna**, who recently retired as manager of the Listowel PU guest of honor at a testimonial dinner sponsored by his friends an mission associates. Commissioner E. M. Creighton, in recognition Hanna's 43 years of service, said, "You have done your job except well over that long span of time and it's our intention that you kn

gs of the commission and the entire community of Listowel." Mayor Hay added, "The town is a better place today because you were ntendent and manager of the utility commission."

**ground distribution,** much to the fore in modern utility thinking, is old the Barrie PUC . . . so much so that they're ripping up the under- system which runs beneath some downtown streets. The system was in operation in 1924 and was considered quite revolutionary for a r community at that time.

uble occurred more and more frequently and by the late 1940s, the n could no longer handle the load. Parts remained in service until about ars ago, but the underground gradually gave way to an overhead, back- system. The system's greatest shortcoming was the lack of "vaults" se the transformers. Up to the time of publication more than 11 tons per and 23 tons of lead had been recovered from the old system.

**e of Embrun** has inquired into the cost of purchasing the distribution n from Ontario Hydro. The village is serviced by the Winchester Rural ing Area.

**uth Clyne,** secretary-treasurer of Amherstburg PUC, is celebrating 25 of service with the commission.

**es** of the Galt Board of Education have decided to give electric heating nce to prove its merit in school additions. They have agreed that c heating be installed in additions to two schools on an experimental

**e guess** won this year's Sandwich East PUC kilowatt-hour estimating t. Contestants are required to guess at energy consumption for the of December in Sandwich East. The actual amount used was 402 kilowatt-hours and the winning guess — 4,545,672 kilowatt- The winner received a water heater and the runners-up won portable c room heaters and hair dryers. The utility finds this method effective ulating interest in Hydro progress.

**Johnstone,** a Finch Hydro commissioner for 22 years, has retired. He ecently presented with a silver tray on behalf of the village at a onial dinner.

**e Fuller,** manager and secretary-treasurer of Watford PUC for 30 years, uest of honor at a retirement banquet held by the commission. He resented with a 25 year service award from the American Waterworks ation and a transistor radio. Succeeding Mr. Fuller is Harry C. Fuller ation), a former commissioner.

**a** now has more than 800 all-electric apartment suites completed or construction. Henry Baldwin, chairman of Oshawa PUC, reveals that -electric apartment buildings with 413 suites are in service and 10 uildings with 396 suites are under construction.

**lydro** is among those utilities who have introduced budget billing to all-electric customers. Under this plan, the customer's total annual c consumption is estimated, and the amount billed in 12 equal install- At the year's end, the actual electrical consumption is compared with timated use and an adjustment is made. So far, rebates have been der of the day at Ajax — ranging from a few dollars to over $70.

**Johnson,** office manager of Leamington PUC, is taking an early retire- in May. Miss Johnson has been with the commission since 1929. She succeeded by Robert Mills, formerly secretary-treasurer of Wheatley

**ondon Free Press** has been co-operating with the London PUC in pre- a paid weekly column entitled the "PUC Corner". Mike the Meter n reality a Free Press writer, is assigned to interview commission ment heads for information on various PUC operations and problems.

**ram** to uncover faulty vision was commenced last fall by the Electrical s Safety Association. Using a vision tester they began with St. ines PUC and branched out into the Central and Northwestern districts. vees of 41 utilities, including electrical, telephone, transport and have been tested. As a result, about 50 per cent of the employees have been referred to specialists for examination. Of these, from 90 per cent needed eye correction. The association is concerned about ision as a potential cause of accidents. □

## ctrically Heated Pavement

nto, two ramps leading to an elevated section of the Gardiner Express- ve been wired and energized for the last three winters, on an experi- basis as a means of beating the snow and ice problem. The findings of tropolitan Roads Department who conducted the experiment have been On the positive side, the ramps were kept free of ice and snow, even nine-inch snowfall followed by freezing conditions. A safe driving surface was maintained without the use of salt which poses a serious corrosion problem.

On the other hand, the electrical method was relatively costly. Installation costs were quoted at $2.80 to $3.40 a square foot and operating costs were reduced from 45 to 32 cents a square foot as the experiment progressed. This compares with one cent per square foot for the use of salt and snow plows. Engineers predict that it will be at least 10 years before electricity is practical for this purpose on a large scale. □

## A Resolution of Friendship



Bertram Merson, recently retired Toronto Hydro chairman, shakes hands with some of the many friends he acquired during 19 years service with the system. At a retirement banquet in his honor held at the Royal York Hotel, Mr. Merson received a television set and a chaise lounge. He was also presented with a scroll of appreciation by John McMechan, chairman of Toronto Hydro, and Harry Hyde, general manager.

The scroll, drawn up in the form of a resolution, read: . . . "Whereas . . . Mr. Bertram Merson has tendered his resignation as a member of the Toronto Electric Commission as of January 31, 1965 . . . and whereas . . . he has served as a commissioner for a period of 19 years and acted as vice-chairman from May 13, 1946 to May 7, 1953, and as chairman from May 7, 1953 to January 31, 1965 . . . therefore be it resolved that we his colleagues record with pleasure our deep sense of appreciation for his keen interest, enthusiasm, and many contributions to the development and growth of the Toronto Hydro-Electric System during his term of office and extend to him our sincere wishes for many years of health and happiness." □

## Cold Current

General Electric Research Laboratory in Schenectady, New York, has come up with a super-magnet incorporating pulling power 300 times stronger than commercial types of a similar size. The magnet operates at liquid helium temperatures (425 degrees below zero Fahrenheit). At this temperature, the wire with which it is wound becomes a superconductor of electricity . . . at nearly zero resistance.

Power supply for the electro-magnet is operated from six ordinary automobile storage batteries. Comparable magnetic fields created by conventional means, without superconductors, would require millions of watts of electric power.

"Discoveries in superconductivity also serve to revive the long-held hope that the phenomenon of zero electrical resistance may eventually become useful in the generation, transmission and application of bulk electric power," said Dr. Guy Suits, G.E.'s research director. But he emphasized such applications were still highly speculative. □

## New Nuclear School

Ontario Hydro is planning for a new nuclear training centre at the Nuclear Power Demonstration plant (NPD) near Rolphton on the Ottawa River. The centre is presently housed in a corrugated iron structure.

Trainee operators, engineers and maintainers spend much time in NPD, Canada's first nuclear-electric station, a few hundred yards away. All have worked in other generating stations.

The new building will feature laboratories for demonstrations and development of operating skills. Tenders specify a one-storey brick veneer structure, 12,000 square feet, to be completed by September 30.

Nuclear Operations Engineer L. G. McConnell said training facilities are

being expanded to keep pace with the growing role of nuclear-electric power in Ontario. Overseas sales of Canadian-type reactors will also involve some training of workers from other countries.

Next year, Canada's first major nuclear-electric plant goes into service at Douglas Point on Lake Huron between Port Elgin and Kincardine. The 200,000-kilowatt station, being built by Atomic Energy of Canada Limited, and Ontario Hydro, will be operated by Hydro staff trained at the centre. □

## All-Electric Town

The town of Lake Winnebago, surrounding a man-made lake south-east of Kansas City, Missouri, is believed to be the first incorporated, fully electric community in the United States. Expected to reach a population of 5,500 with an estimated 1,200 homes, the new community will include a marina, a shopping center, parks, churches, schools and recreational areas. All of the energy required will be provided by the Missouri Public Service Company which is co-operating with the developers to put all the facilities underground. □

## Quebec Plans Research Centre

Hydro Quebec is making a study of European and North American energy research facilities in preparation for a multi-million dollar research center to be built in the next three years. Its purpose would be to consolidate and co-ordinate the research efforts of individuals and industry directed at energy development in the province.

In an interview with the Montreal Gazette, Jean-Paul Gignac, Hydro-Quebec commissioner, said the sponsorship of the center would be decided after the results of the survey are complete. "There are two possibilities—co-operation with the private sector of the economy or else going it alone," he stated.

Mr. Gignac suggested the cost of the land, buildings and equipment would run anywhere up to $10 million. He indicated that development of fuel cells which could supply 10 to 100 kilowatts, and the transmission of power were the kind of problems the new Quebec center could study. □

## Cascade 40 success

Ontario utilities are not the only ones achieving sales success with the Cascade 40 water heater and other electrical appliances. The sales division of the Shawinigan Water and Power Company, a subsidiary of Hydro Quebec, chalked up a 91 per cent increase in 1964 in the sale of the water heaters over the previous year. The division's annual report shows 1964 sales of water heaters totalling 5,762, compared with 3,018 the previous year.

Sales of automatic dishwashers increased 52 per cent, with 936 sold during 1964. Automatic dryer sales increased 15 per cent. □

## The Power Must Go Through

"Neither snow nor rain nor heat nor gloom of night stops these couriers from swift completion of their appointed rounds."

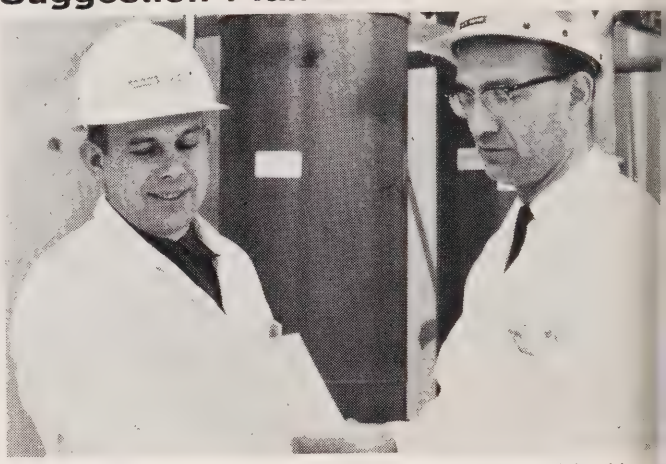
This motto of the U.S. Post Office might apply to linemen anywhere in the province, but especially to Jack Pym of the Kincardine PUC, pictured above. After Ontario Hydro found it impossible to get through blocked roads in Huron Township to answer a power failure summons from a farm, the call was relayed to Kincardine PUC, nearer the trouble.

After an unsuccessful bid at snowshoeing, lineman Pym decided the only way to reach the farm was by skis. Although he hadn't skied in 20 y and was laden with line equipment, Jack made his way through a ra storm over four miles to his destination.

Thought overdue, the PUC was organizing a search party for him v he arrived cold and exhausted at the farm. The power failure was reme in a few minutes, but Jack decided that a one-way trip on skis was eno He waited over until the next day when the roads were cleared.



## Suggestion Plan Award



Philip Finkle, first operator at NPD, Rolphton, is shown receiving his su tion plan certificate from Jack Beaver, assistant superintendent. Mr. Fin idea won $1,033, the largest suggestion award made to date in nuclear power field.

Mr. Finkle's suggestion had to do with the reloading of ion exch columns which had formerly been discarded when spent.

Implemented in 1957, suggestion plan awards to the end of 1964 tot $115,629, and total savings to the commission have been estimate $782,300. Last year, 2,327 suggestions were received from Hydro emplo with over 500 being adopted.

## Unprotected Steel

Ontario Hydro is currently experimenting with "exposed" structural which may be used for the construction of open sub-stations and applications. This new type of steel is actually a low alloy, high te product which is not painted, galvanized or protected by any external t ment. In this case, the rust, which builds up over the first two or years, becomes the protective agent thereafter. In the process of corr the steel goes through a sequence of color change, ranging from the i red-orange, to dark brown to blue-gray.

Hydro is building an experimental structure at Hamilton Beach T former Station, a location which offers adverse atmospheric condition to the proximity of heavy industry. The structure will be inspected an for a number of years to determine its durability. One of the proble be taken into consideration is public acceptance of the changing c which at some stages might denote an image of "poor housekeeping".

So far, this type of steel has been used in the United States for buil and one American utility has employed it for transmission towers in re areas.

## February Energy Production

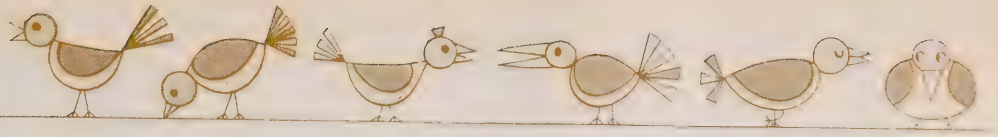
Primary energy provided by Ontario Hydro in February, 1965, totalle 3.55 billion kilowatt-hours, an increase of 5.4 per cent over th same month a year ago.

For the first two months of 1965, the total is 7.43 billion kilowat hours, up 6.7 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand i February was 3.57 billion kilowatt-hours, 1.7 per cent more tha the previous month.

The seasonally adjusted total for February represents 42.86 bi lion kilowatt-hours at annual rates. This is 308.1 per cent of th energy demand in 1949.

# OFF THE WIRES



Canadians, it sometimes seems to us, should e recognizable from afar by their bulging right rm muscles developed over the years by a con-tant groping for the pocket book in the interest f one good cause or another. Even so, the people f Ontario should welcome the latest opportunity r a session of back-pocket calisthenics — the ospital for Sick Children Fund.

Few of our institutions give us more cause for ride. With its 810-bed treatment wards and sur-cal and clinical areas, it is probably the largest entre in the world for the treatment and re-arch of acute diseases of children. More im-rtant — it's the best.

For example, a completely new heart operation veloped by the hospital's cardiac surgeons has een accepted throughout the world in recent onths. And so advanced is the work being car-ed out on cystic fibrosis that a big clinic has cently been established exclusively for this rpose.

Being good has its problems, of course. In-eased medical and surgical knowledge and pulation growth has put a strain on such de-rtments as intensive care, where children are ded through the post-operative crises, and on e laboratories which perform nearly three times many diagnostic examinations as were previ-sly carried out. X-ray functions alone have in-eased fivefold and the outpatient clinics are riously overcrowded.

For these reasons, additions and renovations sting $29,226,498 are urgently needed. Of this, 3,900,000 must be raised by public contribu-ns to supplement grants by the three levels government.

Children from all over Ontario are getting a ance to live normal lives through this hospital. hers are getting an even greater bonus — e itself. And while the great majority of the tients at the Sick Children's are from within e province, they are there from across Canada d beyond.

A sick child cannot be condemned by political undaries and when a particularly baffling afflic-n strikes — the chances are the cry will go up 'send him to Toronto'.

When it does, it's up to us to provide the cilities.

When pondering the great inventions which ve been made in the electrical field over the ars, one is inclined to think in terms of sophisti-ted communications equipment and missile ding systems. Certainly not of Joseph Koblen-y and his modest Markham basement workshop. t this unassuming construction man is pre-ntly adding the final touches to an invention ich might eventually effect more of our lives ectly than all the moon rockets combined.

His project, a low-cost and foolproof elec-ally-operated window, has been CSA approved Mr. Koblensky plans to get production under-y this summer. Driven by a tiny electric motor, moving section of his window slides hori-zontally, opening and closing at the touch of a button. In tests, the unit is said to have func-tioned continuously and without fault for 30 days — equivalent to 20 years of normal service.

Mr. Koblensky may never put anybody on the moon but it looks as if he may be letting fresh air and sunshine into a lot of lives. If successful, he shouldn't suffer financially, either. Whoever invented the hairpin and the paper clip must have done all right.

■ If electricity is destined to open and close our windows, it also seems fated to play a role in discouraging any heavy tipplers among us. An Associated Press report describes how a man, on reaching for a glass of hootch, "quivered and shook". His "eyes bulged" and his "facial muscles twitched" as 18 volts of electricity shot through his head. It was all part of a new treat-ment for alcoholism being carried out at a hos-pital in Michigan. The poor devil had previously downed glasses of milk, water and fruit juice without undue repercussions. Only the booze was wired.

The theory is that the patient, by connecting the alcohol with the shock, is conditioned to avoid alcohol. A make-believe bar is used to make the patient's mind associate the bar as well as the drinks with the unpleasant experience.

If nothing else, the procedure should be enough to convince a man he should move on to another bar. It might also be useful in cutting down bar expenses at conventions. On the other hand, some people may be persuaded to keep on drinking because it feels so good when they stop.

■ As we go to press, a Globe and Mail report informs us that Ted Power, playing coach of the Woodstock Athletics and a Woodstock PUC sales-man, scored the tying and winning goals in capturing the OHA Senior A group championship. Seems like Ted is as good with a hockey stick as he is with a brief case. He is featured in our article commencing on page four of this issue.

■ Growing old is an insidious process which only strikes home when items such as this are brought to our attention. In a year end report, the Owen Sound PUC notes that of 48 homes built in that city in 1964, 24 were electrically heated, 21 had gas and three were oil heated.

Doesn't seem so long ago when oil was the modern way of doing things. And where does this leave coal? In one way it's still in there, helping produce electricity at Hydro's giant thermal-elec-tric stations.

■ Last month, in our article, "The Men Who Say Go", we explained something of the complex and exhaustive techniques employed in commission-ing giant steam turbine units including the critical load rejection test. We have since had a letter, signed by a mysterious A. Cajen, describing how these machines are started in regular practice! For what it's worth, here it is:

De firs ting is for commence de hoil pomp. Wen de pressure his hokay den commence de tur-been. Hopen de trottle walve pretty slow, so de steam what his turn to water come oudt de lille hole on de bottom. Wen de water aint no more, plug de lille hole by shot de walve, den hopen de trottle som more, wen de tur-been his start for turn hover (not de hole tur-been, jus de rotor) den shot de trottle walve.

Now's de time for look for see hif you hear someting. Hif you don hear someting when you look good, she his ho-kay for make go more fast. Look de hoil presshur, look de water, look de steam, look everting his shee's ho-kay for put de load.

Try firs de hoxciter to see hif she his work. Poot won han on de wire and de odder han on de tur-been. Hif you harm feels like you fast aslip de hoxciter his ho-kay.

Now everting his ho-kay for de load, so shot de seitch han latter go. Hall de time de hengineer mus valk around de tur-been hand look for someting. Hif you no fine someting dots good, but look hannyway so de boss tink you good hengineer hannyway.

P.S. No. 1 Don forget some wackum.

P.S. No. 2 Run lak hell hif she blow opp.

■ We've heard of some pretty sneaky tactics in the competitive world of business but the latest antics of a local gas company come pretty close to larceny. Comely females are being trained to repair and adjust appliances! In addition to the technical aspect of the furnace, water heater and range, the repairwomen are being schooled in company history and the story of natural gas.

One-upmanship being what it is, the electrical utilities will have to make some adjustments. We can envision shapely meter ladies and curvaceous sales types but the mind boggles at bunny girls climbing power poles.

■ Not that competition from gas is new. The following quote is from the Canadian Electrical News, May, 1906:

"The gas fellows are not sleeping. One of the latest is competition for the electric push button. You push a button by the door and light the gas burner in the chandelier. It's pneumatic — not electric. Yes, they're busy — are you?

We can chalk that one up for electricity.

■ There is food for thought in an Associated Press report which recently came to our atten-tion. It seems that William Wright, 73, and his wife, had lived in a gas-lit cottage near Byfleet, England for 45 years. On being informed he had won $52,000 in a soccer pool, he commented: "Now at last we can put the electric in." □



# take a lifetime holiday from dishes

Sick and tired of doing dishes? An automatic electric dishwasher will wash, rinse and dry your dishes hygienically clean for pennies a day. Don't be a dishwasher — buy one!

***your hydro***

*LIVE BETTER ELECTRICALLY*

*This is one of a series of advertisments prepared by Ontario Hydro for the municipal electrical utilities of Ontario to assist in their local advertising program.*

NTARIO HYDRO NEWS MAY, 1965

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IE ELECTRONIC
GE IS DESCRIBED
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## The helicopter is an important tool in the construction and line maintenance kit

## SURVIVAL IS AMONG THE THINGS HYDRO MUST CONSIDER IN SOME OF ITS OPERATIONS

MAY, 1965

# ONTARIO HYDRO NEWS

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20 Talking Talent

**THE COVER**

Helicopters, freight trains and a pretty girl contribute to the intriguing pot-pourri on this month's cover. What do they have in common? They're all part of the electrical picture and the stories from which they were borrowed are in this issue. See pages one, eight and fourteen.

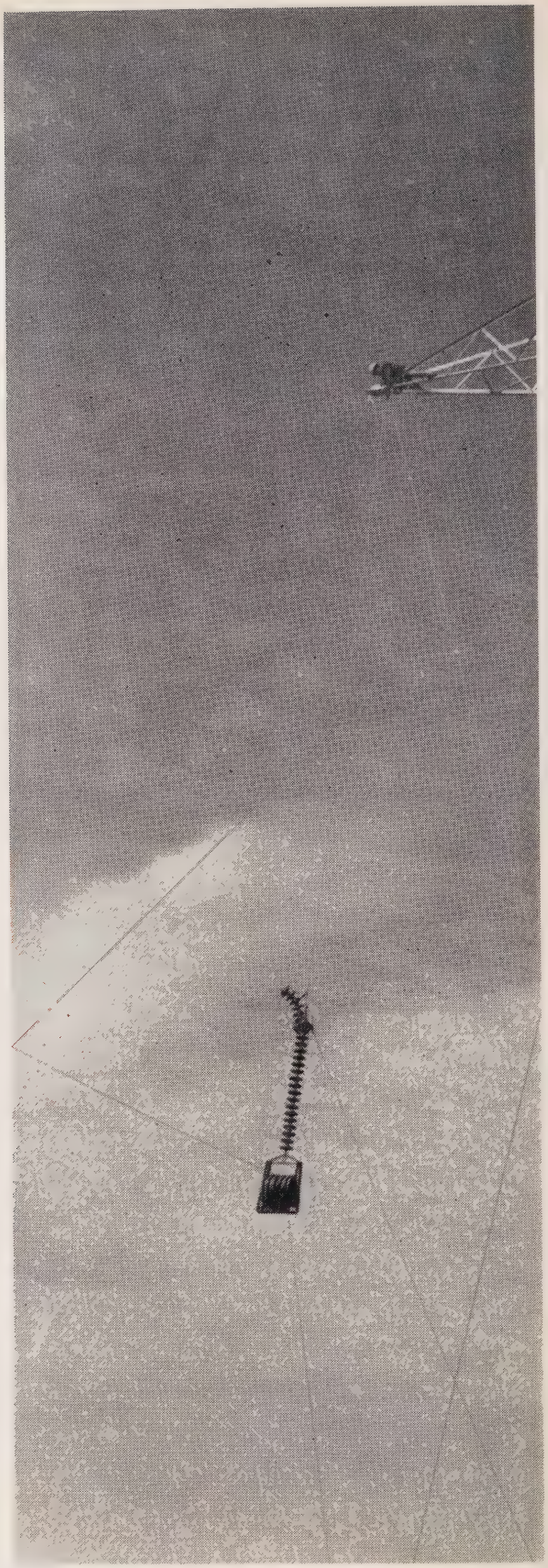
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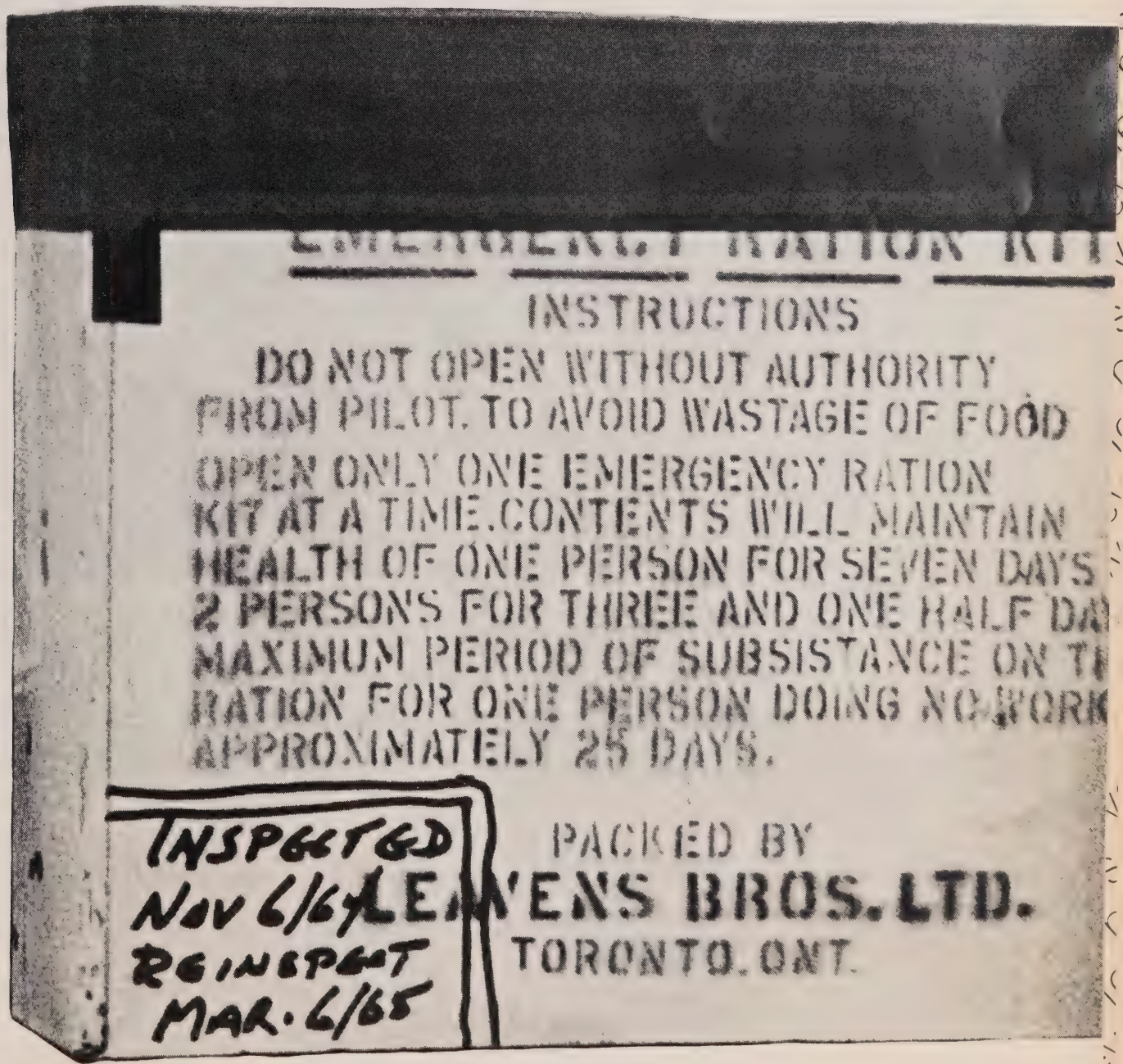


*Nerves are a luxury Ontario Hydro linemen can do without on jobs like this. Perched on the bridge of a V-tower on the extra-high-voltage line, our aerialist will attach the giant insulator string being hoisted from the ground. Staff photographer Ted Johnson caught the action, near Coldwater. The EHV line will be extended as far south as Barrie this year.*

Freeze-dry meals are among the vital vittles in Hydro's emergency rations.

# FOOD FOR SURVIVAL

by LOIS LANE





*Preparation is the key to survival in the North. Helicopter pilot Bruce Best checks his emergency equipment before taking off on a northern assignment.*

Feeding an army of men at construction locations in the remote north or at base camps anywhere in the province is something Ontario Hydro has done with pride.

The abundance, quality and variety of the bill-of-fares at these establishments has become something of a legend among the men who work in the wilderness. They heartily endorse the motto of the Hydro cafeterias and cook tents — "If you want more of anything, it's yours for the asking."

But providing food for out-and-out survival is another matter. And being trapped in dense bush during a blizzard in below zero temperatures can happen to Hydro people such as surveyors, line construction crews and helicopter pilots.

Survival in the rugged terrain of the Ontario Northland depends on careful preparation and a good deal of thought goes into the provision of food for emergencies.

Spoilage has always been a problem to those buying edibles that may be kept for a long period of time without refrigeration. Conventional canned goods fall short because of their weight and bulk and because they should not always be stored under freeze-thaw conditions.

But with today's instant foods; what goes into Hydro survival kits can withstand almost anything and still cook up into a meal fit to grace any table.

The main ingredient of a meal centers around the meat course and meat cannot be dehydrated by conventional methods. But Hydro's Survey department came up with a varied and unusual selection when looking for a way to include this high source of protein in emergency rations. The rations were for the use of crews surveying the Hornepayne-Manitouwadge line in 1960.

Included in the survival kits were cans of beefsteak, pork patties, diced chicken and turkey, each weighing between seven to nine ounces, yet capable of yielding anywhere from 20 to 28 ounces of meat each when cooked.

This meat had been put through a rather startling process called "freeze-drying", by Essex Packers in Hamilton. Their plant had been originally an experimental operation initiated by the Department of National Defence. The Department was interested in providing food which would keep under any circumstances for the use of the Armed Forces, and for civilians in case of atomic attack.

In the freeze-dry application, the meat, which can be prepared in both raw and cooked states, is first frozen solid, then gently heated in an extremely high vacuum drier at an initial 300 degrees. Canned, a good sized beefsteak rattles around in its container like a small potato and weighs about as much.

"The drying-out process takes away the ice from the meat without allowing it to thaw," explains Dr. Walter Smithies, president of Canada Freeze-Dry Foods. Their Oakville plant has $500,000 worth of equipment. "Moisture actually goes from the ice stage to vapour," Dr. Smithies points out. Most products lose anywhere from 60 to 90 per cent of their weight once processed. Less than one per cent of the original moisture is retained.

"When you want to use a freeze-dry product, you simply reconstitute it with water," Dr. Smithies said as he held up a brittle white mushroom which seemed almost weightless. Mushrooms are ideal for this process as they are almost 92 per cent water.

"And the beauty of the freeze-dry method is that normally perishable foods can be stored without refrigeration and still retain their original shape, color and nutrition. Even the flavor and texture is regained when water is added," he said.

Freeze-drying became a commercial industry in the United States in 1958, after extensive experimenting instigated by the United States Army which experienced difficulty in providing non-perishable and lightweight foods during the Korean War. Now this process can be used for all kinds of meats, seafoods, and certain vegetables which can't be






*These survival tents were spotted along isolated Hornepayne-Manitouwadge line as a precaution against bad flying weather. Construction crews were ferried to the job and back each day by helicopter. Margaret Harrington, left, examines survey crew's survival kits which include everything from freeze-dry beefsteak to chocolate and fishhooks.*

*Dr. Walter Smithies, president, Canada Freeze-Dry Foods, and technologist Tom Blakely examine mushrooms about to be put through freeze-dry process.*

dehydrated — like broccoli, cauliflower, and fruit such as berries.

The Canada Freeze-Dry Foods people sell their products to the various governments for their surveyors, oil companies, air-lines, prospectors, and an increasing number of camping outfitters.

However, the average camper might be discouraged by the cost. A 28 ounce can of raw beefsteak, for example, yielding three or four servings, is listed by the processor at $2.83, while cooked diced beef, providing four servings, is listed at $3.32 a can. Packed in pouches, freeze-dry dinners are $1.27 and will feed two or three people. But Dr. Smithies is confident prices will come down as volume goes up.

Unfortunately, these products cannot as yet be bought in a supermarket.

But meat isn't the only item which goes into survival gear at Hydro. For the surveyors, who usually work four to a crew, both hot and cold meals called Canadian Bush Rations and Surveyor hot lunches are included in their cache. Soup powders, pemmican, malted milk tablets, fortified chocolate, salt, matches, fish hooks, snare wire and compasses are packed in these compact boxes wrapped in heavily waxed paper to guarantee long shelf life. Along with the food are cooking utensils and cutlery.

The Construction Division has an even greater problem on its hands because of the size of its crews. However, when building the Hornepayne-Manitowadge line, they included enough staples at each emergency shelter to keep 15 men for four days. Some of the items included stews, instant potatoes, soups, instant coffee, hot chocolate and orange juice, along with the frozen-dried meats. Cooking utensils, an axe, wash basins, tea towels, flashlights (everything right down to the all-important can opener), was included with light weight tents.

Helicopter pilots are a different matter. They are limited by weight to what they can carry, but along with an axe, sleeping bag and snowshoes in winter, they pack a kit which can sustain a man for several days. Canned meat, honey, evaporated milk, instant potatoes, hard biscuits, chocolate, vitamins and tea bags make up the food bulk, along with matches imbedded in parafin, campherated ice for wind burn, and snare wire.

Who knows, food which we now consider best suited for emergency rations may soon be standard fare. The industry's concern for the needs of the bridge-playing housewife is more and more evident on the supermarket shelves. And it's only one ghastly step from instant foods to a three-course meal of pills. □



# HYDRO IS TILTING AT WINDMILLS



by PAUL CHISHOLM

**Bowing to progress, the windmill is spinning into oblivion as electricity takes over.**

The whirling windmill, once as much part of the Ontario rural scene as the stable or silo, is fast disappearing: victim of progress in the form of widespread hydro-electric service.

Its demise sees the end of one of the few remaining symbols of the pioneer era in Ontario agriculture. For at one time the towering water-pumpers distinguished the newly broken-in farmland as a permanent settlement.

While windmills are still to be seen here and there throughout the province, the demand for new ones is negligible. The last of five windmill manufacturers in the country, Beatty Brothers of Fergus, 12 miles northwest of Guelph, recently ceased production although it will continue making replacement parts for a few more years.

Beatty sales manager William F. Pearson is philosophical about having the wind literally taken out of his sales. "From ancient times, wind has been Man's cheapest form of power," he says. "But pumping water with an electric motor costs only a few cents and the service is there 24 hours a day, independent of the elements."

Heyday of the windmill in Ontario was shortly after the turn of the century. But as recently as 20 years ago approximately 30 per cent of the farms still had them.

Windmills were usually located on high ground where they pumped water to storage tanks under nearby barns or into troughs. Others were mounted atop the barn, where the addition of a line shaft to the mechanism enabled extension of wind power for such chores as grinding grist and chopping corn or turnips.

With 95 per cent of Ontario's farms electrified, the passing of the windmill further shatters the unjust reputation of the farmer as a hide-bound reactionary to technological change. Electricity has become so indispensable to his operations that the farmer has passed his big-city cousin in power consump-



*Wind-powered water pumpers like the one, left, are still to be seen here and there throughout the province but the last Canadian manufacturer has called it a day. Old timers will recall when Eaton's Catalogue looked like this. Reproduction is from Winnipeg edition, 1917-18.*

tion. Average annual use among Hydro's farm customers today exceeds 8,000 kilowatt-hours, compared to 6,144 for the average urban resident.

An eight-foot diameter windmill under ideal conditions could pump 375 gallons of water an hour. Correspondingly, a one-third horsepower electric pump will deliver 500 gallons in the same time for less than one penny.

Mr. Pearson of Beatty Brothers recalls the big day 50 years ago when a windmill was erected at his father's farm near Malton. "To me it meant that I no longer had to take the cows down to the frozen creek every winter's morning and chop up the ice so that they could drink. Flowing water 12 months of the year was a big step forward. It meant as much to the farmer in those days as the plentiful supply of electrically-heated water came to mean to the farm housewife in later years."

Windmills for charging batteries which supplied limited amounts of electricity for farm use were also used in Ontario in the early 1900s. Known as windchargers, they were ruled out on many farms by the high cost of batteries and as rural hydro lines were gradually pushed through the province the chargers could not compete for dependability.

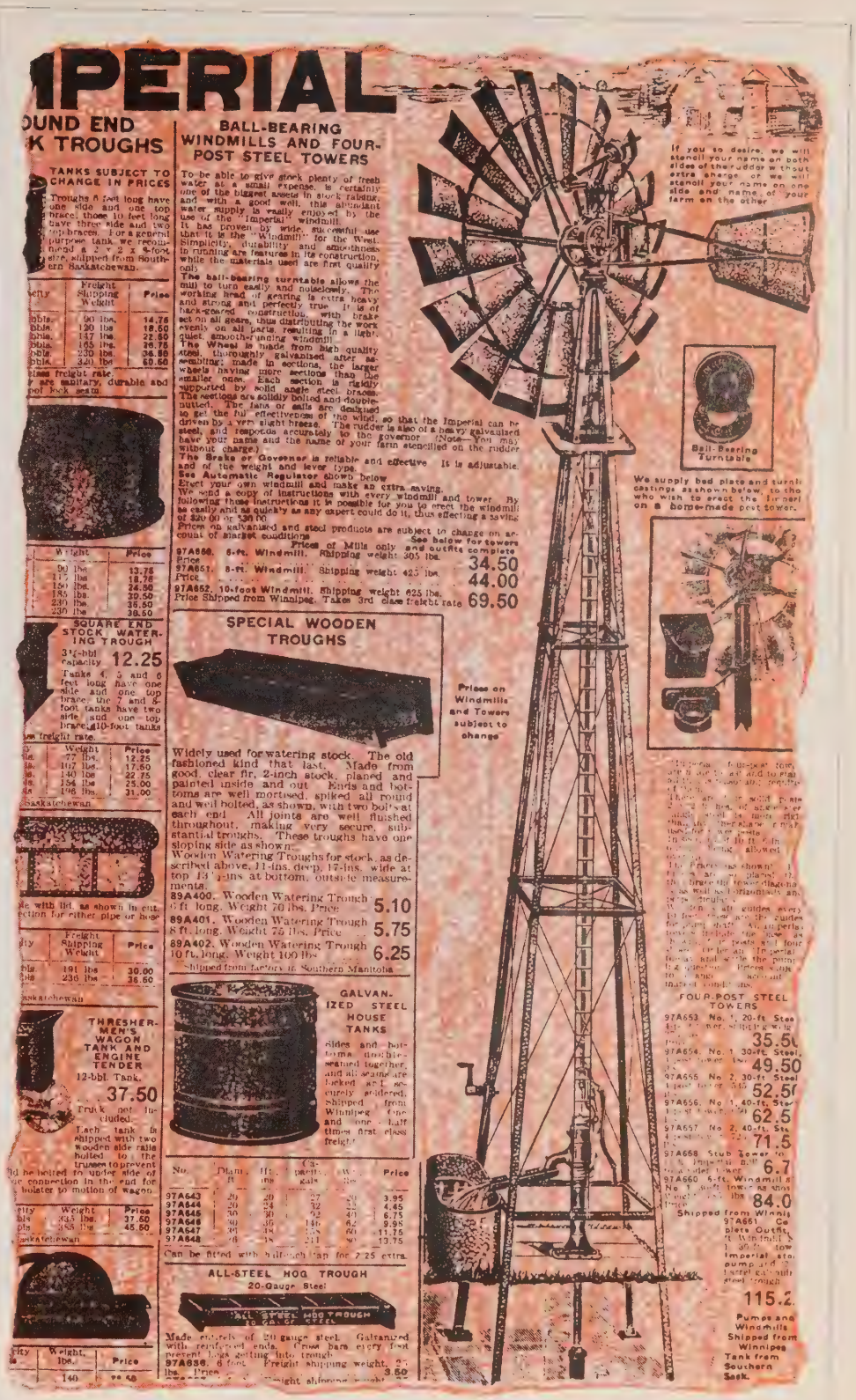
Ironically, the demise of the windmill manufacturing industry in Canada accompanied a temporary surge in exports. Last year Beatty Brothers exported 150 windmills to Cuba and 40 to West Africa. Domestic sales, mostly to Western Canada, totalled 40 — a level which rules out further production as uneconomic.

Beatty Brothers turned out more than 75,000 windmills during the past 30 years including exports to 25 countries. Today the windmill section of the plant is used to manufacture other lines of farm equipment.

The announcement that the company would halt production last December has resulted in some nostalgic mail arriving on Mr. Pearson's desk. For it seems that windmills — like steam locomotives and vintage cars — have their own enthusiastic buffs.

A retired New York City policeman who devotes his spare time to making scale models, sadly wrote:

*A windmill is a sight to see*
*It spells life as it used to be*
*Filled with action and production*
*Shame on us for its deduction.* □




COURTESY EATON'S OF CANADA

The little red caboose still tags along but electronics and computers are directing freight cars

# OVER THE HUMP

## and into the space age



y GORDON MURPHY

asey Jones, the stalwart engineer of song
id story who stayed with his iron steed to the
tter and resounding end, would probably
ke a jaundiced view of what's going on to-
ay in railroading.

The fact is that space-age technology has
ught up with the industry, particularly in
e handling of freight cars — so much so
at a dispatcher sitting at a desk in the newly-
pened Canadian National Railways classi-
cation yard on the northern outskirts of To-
nto exercises control over all train move-
ents within an area of 700 miles.

And that's only part of the story.

The Toronto project, known as "The
ard", is the fourth in a series of automated
assification yards to be opened by the CNR
thin the past six years. With similar car-
ndling facilities at Moncton, Montreal and Winnipeg, commodities moving to the market places of Canada and the world are being processed at twice their previous rate of speed.

The Toronto yard alone, among the most advanced in the world, will within the next 10 years process 10 million cars carrying freight valued at an estimated $3 billion. That's ten times the value of the $30 million invested in its construction.

Romanticists may mourn the passing of the traditional brakeman swinging from the side of a swaying boxcar and waving a fitful lantern as a means of communication. But the combination at the new Toronto yard of telecommunications, radar, computers and an automated centralized traffic control system — CTC to the new breed of railroader — is a decided improvement.

A single centralized administration governs 125 miles of access lines and all movement within the confines of the 1,000-acre yard itself. Freight cars are classified at the rate of 6,000 a day.

The maze of tracks includes 19 for receiving freight trains and 117 for classification of through trains and transfer of local trains. There are 13 tracks for departures, 20 leading to the maintenance and cleaning section, and 21 for repaired and cleaned cars — 160 miles in all.

The complex of access lines is reproduced on a 36-foot-long board in the dispatching control room of the yard's administration building. In front of the board are two control consoles through which technicians route trains along the access lines to the classification area. Progress of the trains is recorded electronically on the board, which also out-

*Nerve centre of the yard's operation is this centralized traffic control room. Operator selects route by pushbutton and progress of the train is recorded electronically on panel.*



PHOTOS COURTESY CNR

lines almost the entire CNR system in the Toronto area.

When a train requests a route into the yard, a warning light corresponding to an equivalent signal alongside the track flashes on the board to inform the operator that a route is required. He selects a route by push-button control and the CTC system takes over.

The switches are automatically lined up and the signals turned to "proceed". Solid lines of light then flash on the board, recording the progress of the train toward the classification area. A complete record of the train's movement is made simultaneously by a penograph, a device that records on paper movement in both time and distance.

Trains arriving at the receiving area are preceded by lists of cars making up the trains, the contents of the cars and their destination. Every car is checked against these lists as the trains arrive. The information is put on punch cards and fed to data processing equipment which furnishes the information necessary to sort the cars and assemble new trains.

From the receiving area, a switch engine pilots the train to what's known as the "hump", the heart of the classification yard, where an old-fashioned phenomenon called gravity does most of the work and a c puter calls the signals.

The hump is a man-made hill over wh the uncoupled cars are pushed. They tr under their own momentum to tracks de nated by the pressing of a button in the o of the hump foreman. The button activ a computer which determines and cont the speed of cars down the hump to the p where they couple "gently and quietly" cars already on the track.

Gently and quietly!

Shades of Casey Jones and those night shattered slumber when shunting operat confused seismographs around the tinent! . . .

But, back to the hump: no two cars down at the same speed. The computer siders such factors as weight, weather an sistance on the track in determining the s of each. The computer is so fast tha using two tracks on the hump two trains be classified simultaneously.

Classification completed, cars going in same direction are assembled into trai the departure area. Cars going the far are directed automatically to the rear o train.






*Rolling down the "hump" to the classification yard, box car is controlled by retarder operators in tower, below. Maze of tracks comprising Toronto yard is suggested in aerial view.*

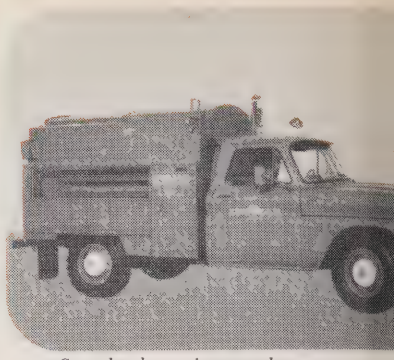


As a train departs, a list of its contents and other information is transmitted automatically through the data processing system to the train's destination. If required, the weight of the car is included, this having been obtained and recorded in the space of 1.4 seconds as the car passed over a dynamic scale on its way to the classification area.

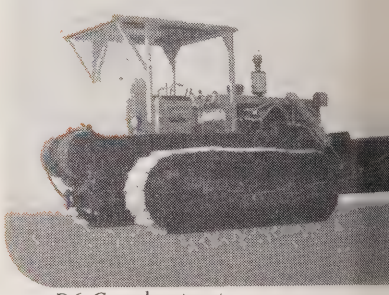
Automation notwithstanding, operation of the Toronto yard requires a staff of 1,500, the members of which are linked into a functional unit by an elaborate communications system including six radio frequencies, talkback systems, teletype equipment and an internal private telephone system. The integration of the work process is such that switch engines are equipped with flashing lights that match the color of the particular control tower under whose direction they operate. This makes it possible to identify at a glance an engine with its control point.

Linking the extensive central traffic control centre with the classification yard network are some 10,000 miles of electric wiring — all carried by underground cable. These are the kind of arteries pulsing life into the new and sophisticated electronic era of railroading. □

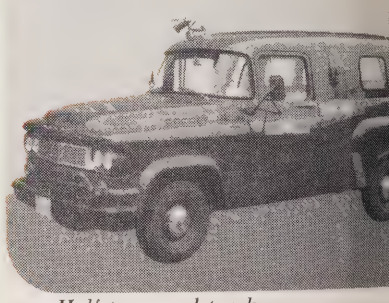
# LITTLE RED WAGONS



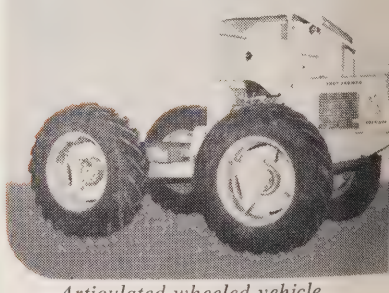
*Standard service truck*



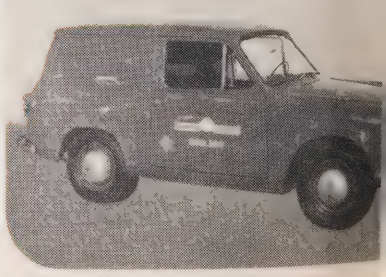
*D6 Crawler tractor*



*Half-ton panel truck*



*Articulated wheeled vehicle*



*Small van*

**These miniature reproductions represent a cross section of the vehicles doing a job for Hydro.**

Small boys may beam at the Hydro "Matchbox" series of vehicles shown on these pages but disappointment awaits them at the drugstore. Beyond the range of the bubble gum set, these "toys" cost anywhere from $1,500 to $50,000 each and they are only a cross-section of the many vehicles used in the day-to-day operations of Ontario Hydro.

Altogether, Hydro has some $25 million tied up in transport and work equipment vehicles. Annual costs run about $6 million including interest, depreciation, repairs, fuel and other expenses.

The transport fleet alone includes 1,600 motorized vehicles and some 600 trailers. They run the gamut from a small car to a 150-ton capacity tractor and float combination. Together they chalk up about 20 million miles annually with some individual units, like security cars, registering up to 90,000 miles in a year.

Trends in utility vehicles are influenced by technological developments and system requirements so that the appearance of the Hydro fleet is continually changing.

The articulated (jointed) arm aerial bucket, for example, is on the upswing in popularity at the expense of the aerial ladder. Much more manoeuverable, the insulated bucket is also essential for bare-hand maintenance on live conductors — a technique enjoying growing acceptance among utilities. Hydro now has 50 of these sky-probing vehicles in its mechanical menagerie.

Another trend is towards the use of a smaller line truck equipped with a radial boom derrick. The larger units, similarly equipped, had in turn, replaced vehicles with mechanical derricks which were formerly considered standard. The new line trucks are achieving very worthwhile savings.

And some vehicles are making their first appearance under the Hydro banner. Such a one is the articulated wheeled vehicle with hydraulic steering which can literally thrash itself free from clinging muskeg. It is being used in spraying transmission line right-of-ways in difficult terrain.

Although many units of the transport fleet are obviously designed for specific Hydro purposes, stripped to cab and chassis they are essentially standard products of the manufacturer. Even so, Hydro representatives sit down with the makers regularly to ensure full advantage is taken of the options available. With the end use in mind, Hydro specifications cover such considerations as engine torque and displacement, tire size and construction, spring and axle capacity, gear ratios, frame dimensions and even the grade of the frame steel which is sometimes optional.

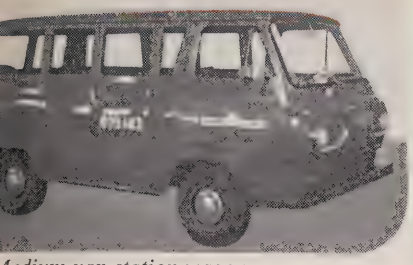
All purchasing is by tender and orders are placed by Hydro's central purchasing section in Toronto through the fleet sales divisions of the manufacturers. They, in turn, invite quotes from their dealers in the area in which the vehicle will be used. In this way local dealers are credited with the sales but all the advantages of a central purchasing system are retained.

It is not until after the cabs and chassis have been acquired that the vehicles take on their distinctive Hydro character. Designed in conjunction with the departments concerned, a series of standard bodies has been developed which greatly facilitate the particular job. A case in point is the forestry truck. It includes an aerial ladder or bucket, saw box, rope closets and a crew compartment.

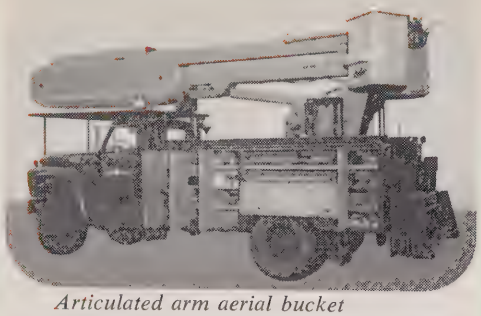
Another is the vehicle used for insulator washing. It features an aerial bucket, water tank, hose and power pump.

Body specifications developed by Hydro are sent out to the various firms specializing in this work when tenders are required.

And if you are wondering about the digits displayed on the sides of the Hydro vehicles, they designate class, make, and the number of a particular type. All trucks carry first aid kits and the crosses stenciled on the exterior indicate their location. Fire extinguishers are also standard equipment in Hydro vehicles as are seat belts, front and rear. □



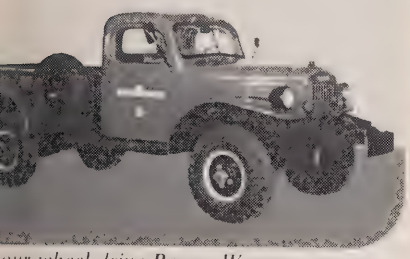
*Medium van-station wagon*



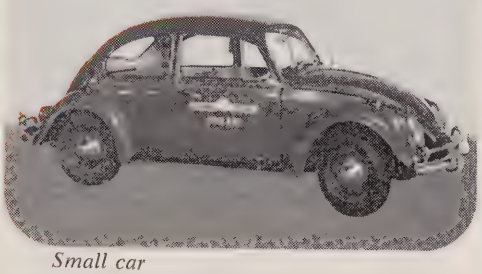
*Articulated arm aerial bucket*



*Stake truck with crew compartment*



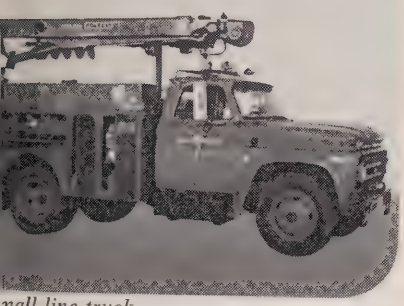
*our-wheel-drive Power Wagon*



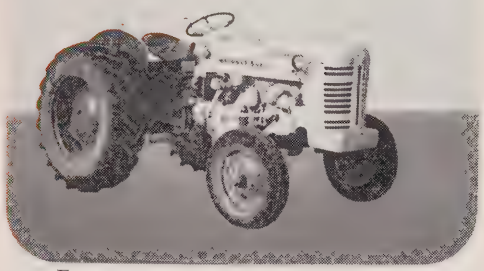
*Small car*



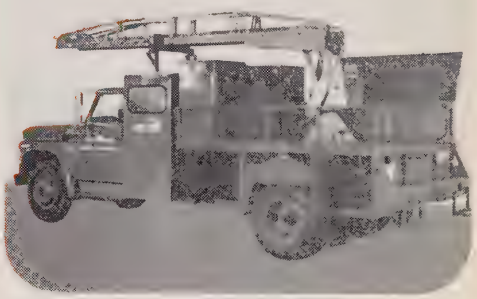
*Six passenger travelette*



*nall line truck*



*Farm-type tractor*



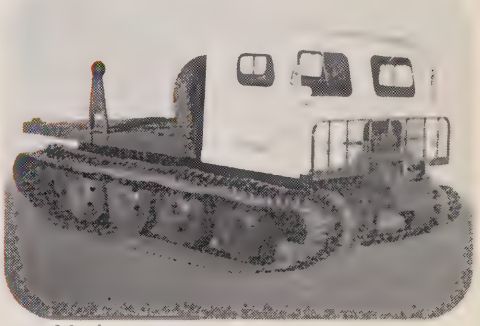
*Forestry truck with ladder*



*ındard size station wagon*



*Stake truck with tarp*



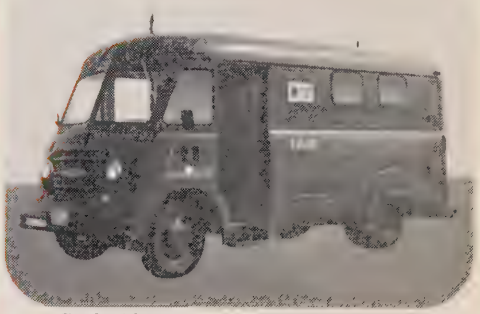
*Muskeg tractor*



*e truck with mechanical derrick*



*Insulator washing truck*



*Curb-side van*



# HYDRO

**As experience is accumulated, Hydro is fin more and more jobs for the versatile helico**

Since the summer of 1949 when Smith Pr strapped himself into the cockpit of a 47-D1 helicopter, Hydro pilots have flow the moon and back about a dozen times.

Not that the astronauts will find a Hy camp on the Sea of Tranquility but the 50, hours logged by the Commission's 10 h copters represent several million miles of ing. The fleet consists of nine, three-p Bell machines and a workhorse Siko S-58D—capable of lifting 3,500 pounds.

Among the first to recognize the poten of the helicopter as a utility tool, Ont Hydro has been using the whirly birds transmission line patrol and right-of- spraying for more than 15 years. More cently they have been utilized in a num of line maintenance and construction o ations. And as experience is accumula techniques and equipment are being refi with gratifying results on costs and efficien

A revolutionary concept at the time, dro's first helicopters were purchased for patrol exclusively. They took to the task convincingly that Operations personnel w der how they ever got along without th The helicopters are under the supervisio line maintenance engineer Tom Burgess they are used primarily for this purpose.

# TAKES TO THE AIR

Virtually all of the Commission's exten-, province-wide transmission line system ow patrolled from the air every six or n weeks. Patrol aircraft flew 120,000 s last year, compared with 6,500 in 1949, ground inspection of the lines, aimed fly at tower footing examination, is now ied out only once or twice a year.

lying within 50 feet of the lines, the heli-er line supervisor can spot even hard to faults like cracked insulators, broken luctor strands and decayed crossarms. in establishing the helicopter as a top in the line maintenance kit, Hydro flyers chalked up one of the world's finest y records. More than 1,500,000 miles ne patrol have been flown without an lent.

ydro was also among the pioneers in the of brush control spraying from the air. gated in 1953 on a limited scale, the pro- reached a peak in 1963 when 6,500 s of brush along the transmission lines sprayed by helicopter. That year, Hydro ters treated a total of 45,000 acres — the st spraying operation of any utility in the d.

Ve're catching up with our spraying " Chief Forester Jack Winters explains. whole transmission line system has been chemically treated, two and three times in some locations, and it looks as if our aerial spraying will level off at about 2,500 acres a year. It will be confined to the more remote areas of the province.

Thanks to the development of new equipment and techniques, the right-of-ways are accessible from the ground. Spraying from "off-the-road" vehicles is somewhat more expensive than aerial methods, but a higher percentage of "kill" is achieved, tending to narrow the cost differential.

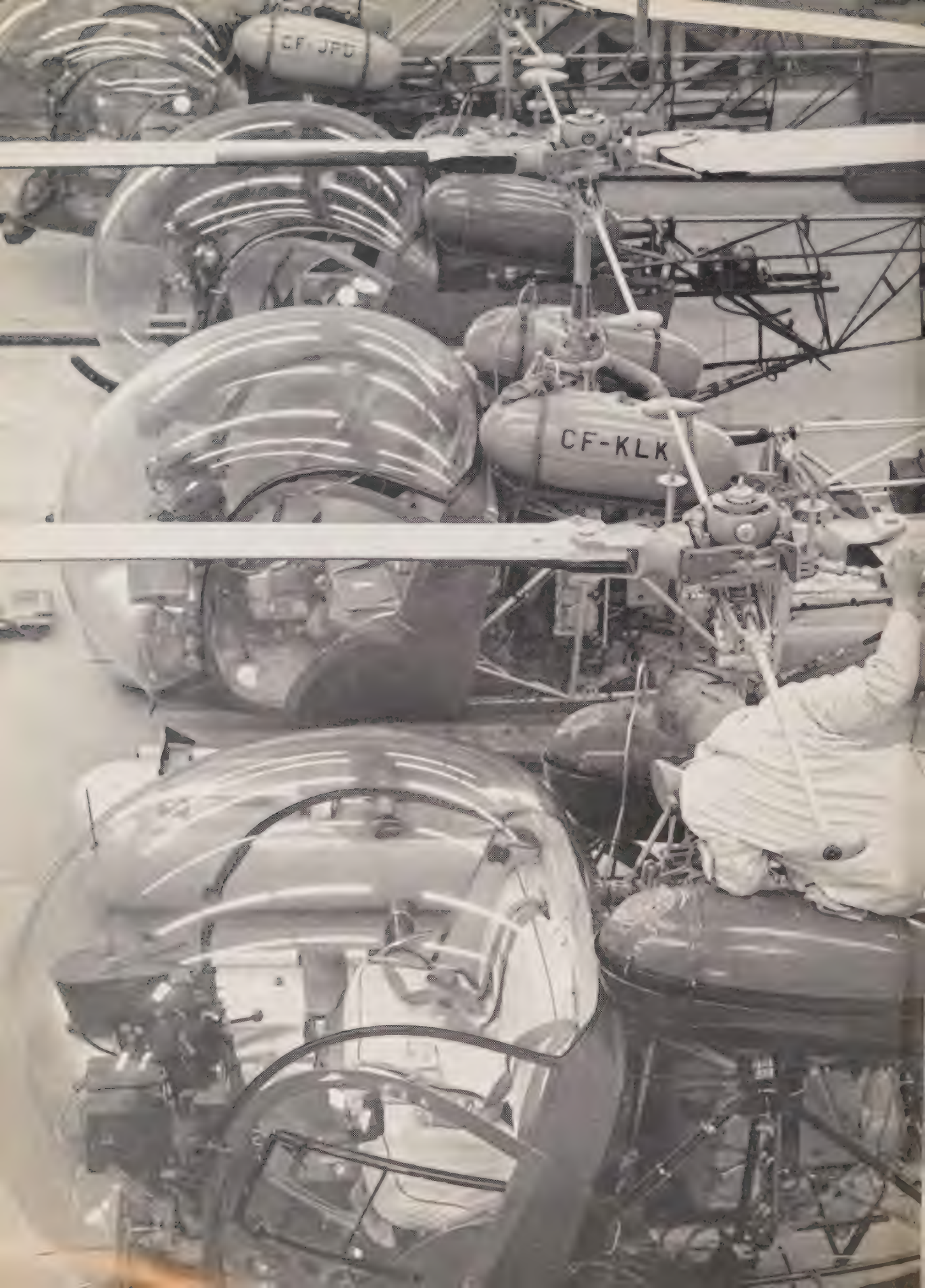
Helicopter spraying recently received a strong shot in the arm from a refinement worked out by the Hydro Forestry Department in conjunction with the Research Division. This involves the use of chemically-thickened herbicide sprays which permit aerial application without drift in winds up to eight miles an hour. Prior to 1963, helicopter flights for right-of-way spraying were limited to almost completely calm wind conditions.

"We will always regard spraying by helicopter as a very useful tool in our total spray operation," Jack Winter says. "It will continue to play an important role in the remote, hard to reach areas across the province."

Latest conquests by the Hydro helicopters have been in the field of construction. Used



*Soaring over an EHV tower, a Bell helicopter, opposite page, assists in line stringing. Large Sikorsky, above, is shown in action northeast of Sault Ste. Marie where it played the key role in a major line construction project.*


CF-JFU
CF-KLK





*Hub of Hydro's helicopter operation is new hanger at Malton (opposite page). Photos on this page show close-up of rope reel used in conjunction with EHV stringing, and helicopters refueling on brush spraying operation.*

viously to supply remote outpost oper-
ns and to ferry supervisory personnel and
t equipment from one part of the job to
ther, these aircraft really came into their
n on the 50-mile wood pole line between
two northern communities of Hornepayne
Manitouwadge, in 1961-62.

Located in muskeg country, which was
ually inaccessible during the summer, this
was built almost entirely from the air.
icopters transported the line crews back
forth each day, flew in all the equipment,
poles and strung the lines.

ince then these versatile aircraft have
n used to construct a number of shorter
s in remote areas and this winter the big
3D played the key role in the construction
ma bringing power to Chapleau Town-
. Airborne techniques used on this 55-
line northeast of Sault Ste. Marie in-
ed transporting and setting 75-foot wood
s, conductor and skywire stringing, and
movement of personnel and supplies.

Helicopters are also proving their worth
the granddaddy of all Hydro line con-
ction jobs — the 440-miles extra-high-
age power pathway from Pinard in the
th to Kleinburg, near Toronto. In sec-
s where the terrain was particularly for-
able, the big Sikorsky was used to fly in
assembled sections of aluminum towers
for other heavy lifting chores. It will
inue to be used for line maintenance on

smaller Bell has been on the EHV job
st from the start, jockeying supervisory
onnel and assisting in line stringing.
he latter technique typifies the refine-
s continually being introduced as know-
is accumulated. With a 7,500-foot spool
ght polypropylene rope suspended from
argo hitch, the Bell pays out a rope line
he ground on each side of the right-of-
Three more are laid over the bridges
of the towers. These lines are then attached to light wire ropes and pulled through by ground-mounted tensioning equipment.

The heavy "bull line", which is used to pull the bundles of four conductors, follows.

On the Chapleau job, the conductors themselves were laid out in this way from a spool slung under the Sikorsky with the use of a special reel carrier developed by Hydro. The cargo hook has a safety release so that the reel can be dropped in case of emergency.

Biggest advantage of this procedure is speed and the elimination of cable-pulling bulldozers which sometimes pose a major access problem.

Another ingenious use of the helicopter in line maintenance work was carried out successfully in the St. Thomas area recently. This project involved replacing 60 miles of 50-year-old skywire on a 115,000-volt line — a job which normally requires a lineman to do a lot more walking than climbing and working.

Linemen were leapfrogged in a Bell G2 helicopter from one structure to another with the result that one man completed an average of 11 towers a day, compared with five by conventional methods.

This was not the first time a helicopter had been used for the express purpose of moving men from structure to structure and it is proving a very useful procedure in cases where travelling time far outstrips the time required to do the actual job.

Too involved the enumerate, the many refinements continually being made to Hydro's bag of airborne maintenance and construction tricks are by no means the exclusive product of supervisory brains.

"One point I would like you to bring out," requested Harry Skelton, construction engineer on the EHV project, "is that everybody contributes on a job like this. With little in the way of precedent to work from, ideas are important and some of the best have come from the pilots, linemen and ground crews. We have management to thank for the broader concept of the project but these are the men who are making it work."

Hub of the Hydro helicopter operation is a trim new hangar at the north end of the sprawling Toronto International Airport complex. From here, under the guidance of Chief Pilot Jim McKaye, the 10 pilots fan out on the various assignments to all parts of the province. They average over 4,000 hours of Hydro helicopter flying time — to say nothing of their extensive experience before coming to the Commission.

Because of the distances involved, one aircraft is based at Port Arthur, one at North Bay and another at the Mattagami River construction projects. But they all end up at the Toronto centre for major overhauls.

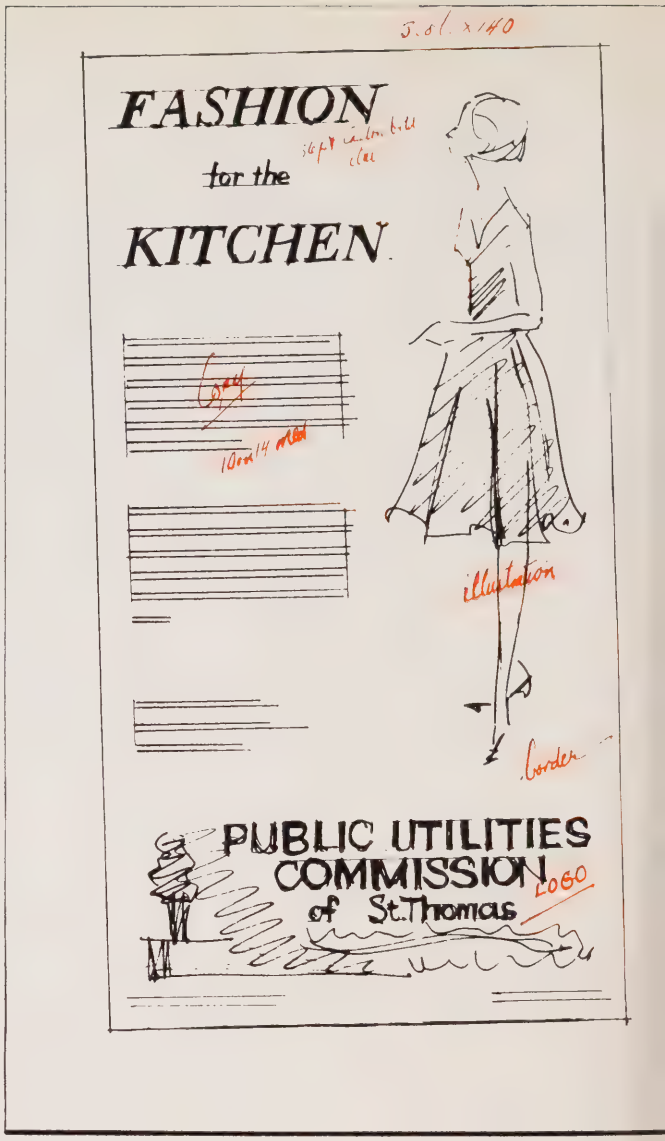
And in the care and grooming of the Hydro helicopters, nothing is left to chance. Inspection and maintenance specifications, as set out by the Department of Transport, are extremely rigid and Hydro adds additional margins of safety in many of its procedures.

Everything but engine overhauls is handled by the Commission's eight air engineers. The maintenance schedule calls for service at 25-hour intervals and this becomes increasingly exhaustive as the aircraft approaches the major overhaul period. After 1,200 hours of flying, the machines are completely dismantled and many of the components which are subject to stress are sent to the A. W. Manby Research Centre where they are put through the latest tests for disclosing hidden faults and metal fatigue.

Considered the odd-balls of aviation not so long ago, the whirly birds are now proving their worth in all corners of the world. At Hydro, their application seems limited only by the ingenuity of the people who use them. And these are a pretty resourceful lot. □



*Informal get-togethers between representatives of St. Thomas PUC and the local newspaper are one ingredient aiding the utility's highly successful advertising program. Left to right are: J. Dawson Winchester, Times-Journal advertising manager, Bill Underhill, PUC manager; and P. R. Locke, chairman.*




# St. Thomas finds IT PAYS TO ADVERTISE

**This utility plays up people in its ads and the newspaper gets the nod.**

Madison Avenue sophisticates might turn up their noses at the kind of advertising practised by St. Thomas Public Utilities Commission, but this wouldn't bother the local Hydro folks in the least. Arty nuances may have their place, they concede, but not when it comes to telling the people of St. Thomas about their utility and the services it is providing.

For this the PUC relies mostly on the local daily newspaper. Home-tailored advertisements, most of them a joint effort between the utility and the *St. Thomas Times-Journal*, are not only winning acclaim in the publishing world, but are frequently copied by utilities in other Western Ontario Communities. More important, they seem to be getting home to a gratifying percentage of the 8,200 customers served.

Like most utilities, St. Thomas makes use of the various advertising services available without cost from Ontario Hydro. It also co-operates with Hydro and other allies in the industry in joint, province-wide projects.

Even more important, the utility feels, is the establishment of a continuing rapport with its customers in a free and easy atmosphere of mutual respect and confidence. This it regards as a local matter which can only be achieved by the individual utility.

"In advertising, like everything else, people in any community are interested in the people and events surrounding them," explains Bill Underhill, St. Thomas PUC manager. "This is the cornerstone of our entire approach."

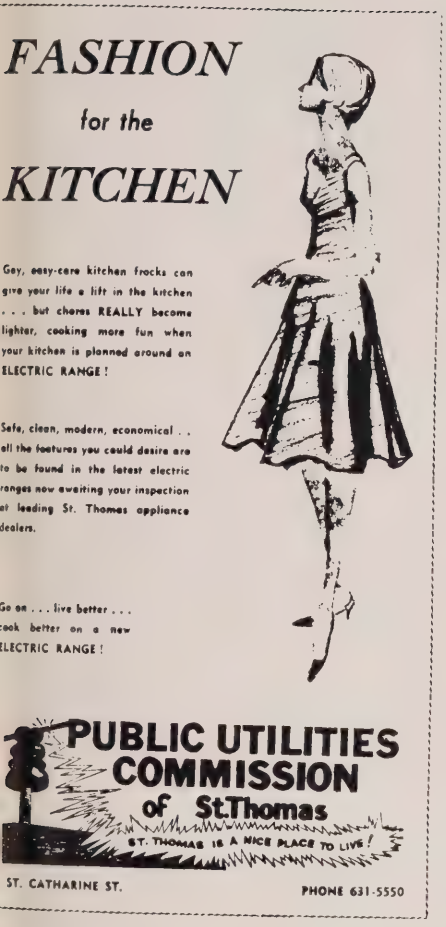
Emphasis in the newspaper advertisements is on the light-hearted and humorous — with big illustrations and few words. "As well as direct and indirect promotion of the uses of electricity, we endeavour to dispel any suggestion of the commission as a bureaucracy," says Mr. Underhill. "While stressing our essential services and good neighborliness, the messages also acquaint citizens with the vital role of Hydro in the community and the reasons for routine projects such as tree-trimming, or drain clearing."

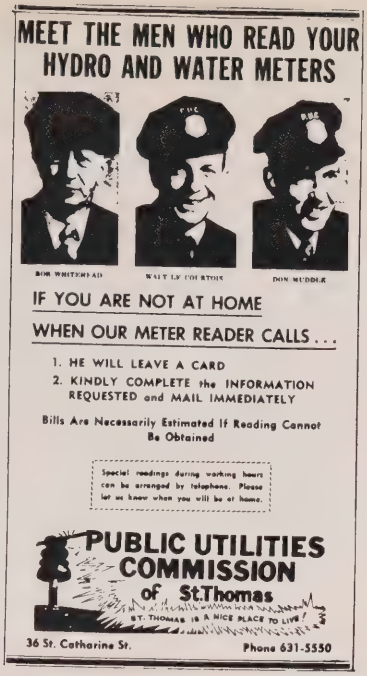
Examples of St. Thomas PUC's ads include a series of recipes entitled "Cook Better E trically," which are regularly featured on women's pages. At tree-trimming time, utility runs a display headed "Trees Beautiful But . . ."

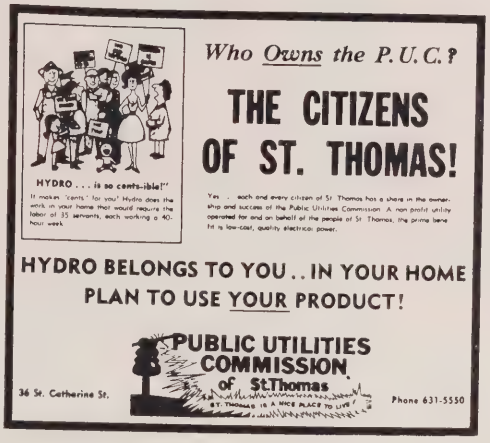
"May We Be of Service" was the them another series featuring photos of the o staff at work, with each employee identif

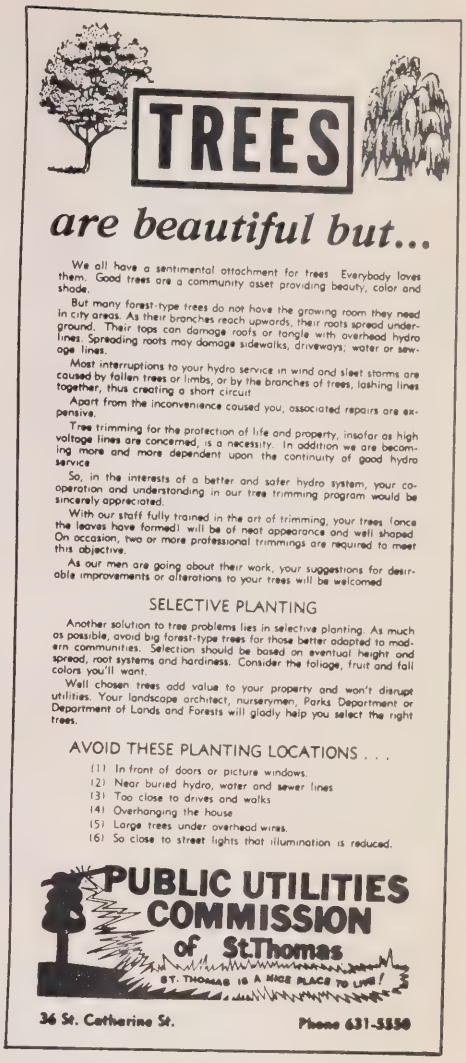
Periodically the utility's meter readers introduced to the public through the ne paper columns and the retirement of a year employee was featured in another The fact that PUC drivers have completed John Ambulance courses is pointed out another service to the community. For moting the all-electric kitchen or the e trically-heated home, the utility selects l residences for its photographs.

St. Thomas PUC devotes approxima .5 per cent of its revenue to advertising. I year this included 32¼ pages in the ne paper. A morning news broadcast was sp sored on the local radio station, with Ont Hydro picking up the tab on alternating of the week.




Many of the utility's newspaper ads have n featured in *Publishers' Idea Exchange*, .S. magazine devoted to raising the stand- of newspaper advertising in North Am- a. In 1963, the *Times Journal* won an rd for the best retail support of a na- al advertisement in a contest sponsored the Newspaper Advertising Managers' ociation of Eastern Canada.

he award "showed outstanding co-opera- at local level in support of Ontario lro's clothes dryer promotion 'Sunshine ial'." During this promotion, and others similar nature, St. Thomas gained one ie highest per capita records of appliance in Ontario.

here is additional evidence of the effec- iess of the utility's advertising program. n area of the province where gas com- ion is at its toughest, average monthly umption per residential customer in St. nas is amongst the highest in the entire ern Region. Total power consumption shown a 43 per cent increase over the ive years — no small gain in a city where industrial expansion is not spectacular.

Mr. Underhill makes no claims as to which phase of the utility's advertising is the most effective. "We only know it pays to advertise," he said. "To fully judge the impact of our efforts we would have to stop them. And this is a risk too great to take in view of the strong competition we face."

PUC Chairman P. R. Locke insists that advertising is only effective if the utility is genuinely concerned about its public relations.

"Nothing equals the daily newspaper for reaching the maximum number of people," he believes. "Other media have their uses, of course, but in our case the newspaper is the most effective."

And what does the newspaper expect from the utility in its working relationship? Mutual trust and flexibility, according to J. Dawson Winchester, *Times-Journal* advertising manager.

"The relationship between advertising man and the utility must be a very personal one," he says. "After all, the salesman is working for the utility as well as his paper. He should be thoroughly familiar with the utility and its functions. He must earn the confidence of the utility if he is to be able to fully use his talents.

"While St. Thomas PUC emphasizes public service, you might also liken its advertising program to that of a large, well-run department store in the community. The advertising program is properly budgeted, and through the year the various 'departments' are highlighted. In our case we have the flexibility to change the subject of an advertisement within 24 hours in order to take advantage of such things as a sudden change in weather."

Mr. Underhill added a final word:

"Far be it from me to suggest that ours is the best way of doing things", he said. "It seems to work for us but the most important things to keep in mind in working out an advertising program adopted to the local situation are ingenuity, continuity and planning. We never forget that we are dealing with people." □

# TALKING TALENT

**More than a quarter of a million Ontario students participate in the public speaking contest co-sponsored by Hydro**

When speeches were over and the applause had died down at the Ontario Public Speaking Contest finals, it was Hydro's turn to talk.

Called upon to present the awards, Ontario Hydro Chairman W. Ross Strike took the opportunity to explain why the provincial Commission and the associated municipal utilities were involved in the contest.

"The Hydro enterprise is very proud to be associated with this big, co-operative undertaking," he said, "because we feel we can make a worthwhile contribution to the development of the province in the making of its future leaders."

He said that developing character and leadership was the responsibility of all citizens and that each citizen had an interest in Ontario Hydro and the associated municipal systems. The chairman made it clear that Hydro was not seeking praise and publicity in assisting with the contest.

Local utilities and Districts of the Ontario Municipal Electric Association participate at the various levels of the contest leading to the provincial finals, held each year in Toronto. About 300,000 elementary and secondary school students participate in the event, which is co-sponsored by the Ontario School Trustees' and Ratepayers' Association and Ontario Hydro.

This year, girls took all three awards in the secondary school prepared speech section. Heather Hayden, 14, of Oxtongue Lake, took first prize of $100 for her talk on Mexico. Barbara Jeffrey, 17, won $75 for her entry on the United Nations; she is from Westmeath, near Pembroke. Lynne Dodge, 16, of Guelph, placed third. She won $50. Each girl was also given a trophy.

Similar prizes were awarded in the secondary school impromptu category. Top winner was Michael Ignatieff, son of Canada's ambassador to NATO and a student at Upper Canada College, Toronto. His topic was Canada's present political situation.

Second prize went to Tom Nowak of Scarborough. This 16-year-old's extemporaneous talk was on "Economic Control of Canada by the U.S." Third-place winner was Barbara McIntosh, 19, of Brighton.

Diminutive Mark Downey, 12, of Carp, took first place in the finals for elementary school students. Mark's warm impressions of his home on the farm won him $75 and a cup.

Second among the younger set was Sandra Speight, 14, of Keewatin, who won $50 with a talk on Water Conservation. Douglas Ireland, 12, of RR 2, Kemble, was third.

All 42 finalists were invited on a bus tour of Niagara as guests of Ontario Hydro. □



*Champions in the secondary school impromptu category was this trio. Michael Ignatieff, centre, was the winner, followed by Tom Nowak and Barbara McIntosh.*



*Size didn't mean a thing in the elementary school category where tiny Mark Downey took first place. Sandra Speight was second and Douglas Ireland, third. Ontario Hydro chairman W. Ross Strike made the presentations.*



*Boys were outclassed in the secondary school prepared speech section by this winsome trio. Left to right are: Lynne Dodge, 3rd; Heather Hayden, 1st; and Barbara Jeffrey, 2nd.*

# ALONG HYDRO LINES

## New Madawaska Project



*expansion will quadruple its output.*

Ontario Hydro has announced plans for a $14,000,000 extension to its Barrett Chute generating station on the Madawaska River, 18 miles south of Renfrew. Two 60,000-kilowatt units will be installed. Construction will start in the summer of 1966. On completion in 1968, the plant will have a total capacity of 160,000 kilowatts — four times its present size.

Dotted outline in the photograph shows the enlarged powerhouse, location of the extended headworks and the two penstocks.

Enlargement of Barrett Chute is Hydro's second Madawaska River construction project. At Mountain Chute, eight miles upstream, preliminary work is near completion, and construction crews will move in this summer. Scheduled for service in December 1967, the two-unit Mountain Chute plant will also have a total capacity of 160,000 kilowatts.

Expansion of Barrett Chute is part of a province-wide program by Ontario Hydro to harness the remaining water-power sites suitable for development. Under this program, one new or enlarged hydro-electric plant will go into service each year from 1967 to 1970.

One of the major aspects of the Barrett Chute redevelopment will be deepening of a 2,150-foot power canal to increase flow to the station.

Construction work will be directed from the Mountain Chute project, making use of concrete mixing and other facilities already established. A project office will be established at Barrett Chute and many of the construction workers employed at Mountain Chute will be offered jobs at the second project when work is started. □

## Fuel Cell Research Urged

Canadian industry has been urged to establish the technical base for a fuel cell industry to prevent this country being totally dependent on imports in the future.

Dr. H. Sheffer, chief superintendent of the Defence Research Board's chemical, biographical and radiation laboratories, told representatives at a recent DRB symposium that fuel cell development would have considerable bearing on nuclear power development and not necessarily a negative one. Although a power source in its own right, the electro-chemical fuel-cell must be periodically replenished with energy. One method of doing this would be to use off-peak nuclear power for the electrolysis of water (to hydrogen and oxygen) or the synthesis of hydrocarbons, which in turn serve as the basic materials of fuel cells.

## Hydro Director Dies



Robert Harrison, 53, director of Hydro's Accident Prevention Division, died recently in Toronto.

Born and educated in Scotland, he joined the Commission in 1930. Mr. Harrison spent more than 30 years of his Hydro career in accident prevention work. He served as a senior safety officer prior to his appointment as director, in 1962.

Active in the Masonic Order, he was a past master of Delta Lodge in Toronto. He was also a member of the Society of Safety Engineering — Ontario, and the Society of Safety Engineers — U.S.A.

He is survived by his wife, Margaret, a son, Robert, and a daughter, Robert Campbell.

## Plug-in Ceilings

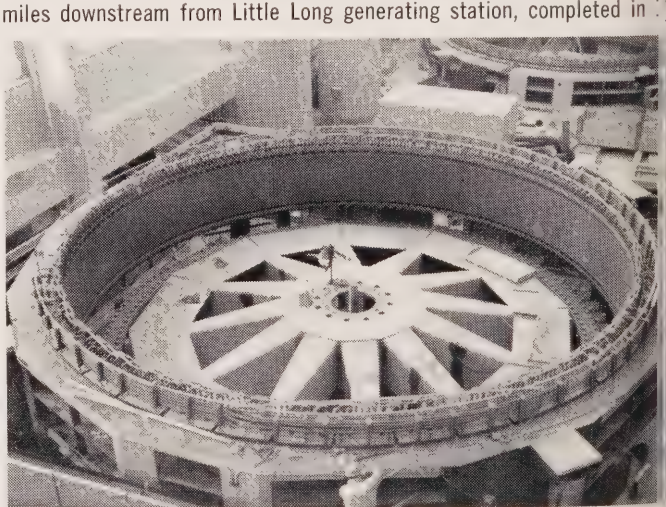
The latest thing in electric heating in the United States is a plug-in ceiling which can be rolled on like wall-paper, according to a report from New York. The new electric heating system emits infra-red waves which convert to heat on contact with objects in the room. The system is a flexible "sandwich" consisting of two outer layers of thin vinyl and a filling of nylon interwoven with thread-thin resistance wiring. It is installed in panels which are unrolled onto the ceiling and bonded with a special paste. The system operates on 240 volts with a heat output of about 17 watts per square foot.

## Harmon Headpond Flooded

Marking the end of major construction work, headpond flooding operations have been completed at Ontario Hydro's Harmon generating station on the Mattagami River, 55 miles north of Kapuskasing. The 620-acre forebay extends five miles upstream from the Harmon plant.

First unit of the 129,200-kilowatt station is slated to deliver power in June this year, and a second generator is scheduled for operation in August. Provision has been made for installation of two additional units if required.

One of three new Mattagami River developments, Harmon is situated 7 miles downstream from Little Long generating station, completed in 1



*Harmon unit will start up in June.*

Kipling generating station, two miles below Harmon, will go into service next year.

The plants will have a total capacity of 376,200 kilowatts on completion of Kipling, and will be operated by remote control from Pinard transformer station, 60 miles north of Cochrane.

## S.S. Tarantau

Among this season's debutants is a lady with one of the biggest bottoms on the Great Lakes. She's the recently christened S.S. Tarantau, owned by Canada Steamship Lines, and designed for exclusive use on the inland waterways




*e's plying the lakes with coal.*

r main duties will be carrying coal to Ontario Hydro thermal-electric plants Toronto from Conneaut, Ohio.

Built at Collingwood Shipyards, the 730-foot-long ship is now the largest lf-unloading vessel on the Great Lakes — 50 feet longer than the sea- ing Cape Breton Miner which was commissioned last year. Capable of rrying 30,000 short tons of coal and unloading 4,200 tons per hour, her treme draft is 28 feet, four inches.

A 10,000 horsepower steam turbine is expected to give up to 17-miles-an- ur when the vessel is loaded. A propeller in the bow provides extra noeuvreability for docking or departing.

Launched in Collingwood last summer, the ship underwent trials on Geor- n Bay last fall and began her initial coal runs in May. □

# IUNICIPAL BRIEFS

**Toronto Hydro lineman,** severely burned while rescuing a fellow worker t fall, has been awarded the British Empire Medal. Harold Acornley won medal for climbing a pole to extricate Roy Seabrook when a transformer loded.

**ry spring,** Chatham PUC honors its employees with a banquet. This year, ) employees and commissioners, with their husbands and wives, heard st speaker, C. W. Palmateer, advertising manager of Ontario Hydro, out- progress in the field of electric heating. Noting that this year marked 50th anniversary of the Chatham utility, R. S. Reynolds, manager, said PUC operations in the city had doubled over the last 10 years.

**. Walke** of Ontario Hydro has been elected president of the Ontario As- iation of Certified Engineering Technicians and Technologists. Preston chairman G. R. Cooke is among the regional delegates. The association has 14 chapters in the province and three more are planned for Peter- ough, Kingston and Belleville.

**tributions** to Ontario Hydro's growing collection of antique electrical ipment and appliances continue to flow in. Among the latest is a 40- -old electric stove brought to the attention of Hydro officials by Oakville . The goliath range sports two ovens, a warming oven, four surface nents and an array of switches reminiscent of the control room of a erating station.

**ert Gillespie,** veteran Meaford PUC foreman, was presented with the adian Electrical Association resuscitation award at a recent meeting of Georgian Bay district of the AMEU. He had successfully revived a fellow loyee who had come in contact with a high voltage line.

**h York Library Board** is considering electric heating for future library lings. Two lady members of the board were enthusiastic about the nliness of electric heating and suggested that this would represent sub- tial savings in cleaning costs.

**Shields,** sales and service supervisor, Brockville PUC, reports that of 27 lings presently under construction in that city, 11 will be electrically ed, three will use oil and nine will install gas. Four are undecided.

**eeping with a growing trend among utilities,** Stratford PUC estab- d two new departments — sales and service. The two were formerly ined. Howard Shantz has been appointed sales supervisor and Keith on, service supervisor. D. M. Seath, general manager, commented, "We feel that the business carried out in our service and sales departments res the establishment of two departments. Customers are utilizing the ties of our appliance repair department on an ever increasing scale and the PUC will be embarking on a highly concentrated sales effort to promote electrical living."

**Woodbridge Hydro** celebrated 50 years of service in April with an anniversary dinner. Among the guest speakers were Major A. A. Mackenzie, MPP, York North, and W. Ross Strike, chairman, Ontario Hydro.

A former reeve and Hydro commissioner in Woodbridge village, Major Mackenzie paid tribute to Sir Adam Beck and the pioneers associated with him for their great determination in making low-cost public power available to the whole province.

Mr. Strike pointed out that in the past 10 years the peak load in Woodbridge had increased just 5.5 per cent while the average monthly residential consumption had risen 55 per cent. He said the average cost of power had actually decreased 13.5 per cent — a strong indication that increased energy sales were the answer to continued low rates.

**Nepean Hydro,** along with representatives of Ontario Hydro's Eastern Region, have been negotiating to obtain an agreement for a major all-electric development in Nepean Township.

**St. Thomas PUC** has chalked up an enviable record for appliance sales. Aggressive selling by local merchants coupled with the utility's promotional activities, has resulted in a 79.2 per cent saturation in electric ranges and 59.2 per cent saturation in electric water heaters in St. Thomas. The utility's advertising program is described elsewhere in this issue.

**Congratulations** were extended to King City Hydro, among the youngest members of the Hydro family, in a letter from C. E. Crease, consumer service and sales engineer, Central Region. King City Hydro Chairman John Mann read the letter at a utility meeting:

"1964 statistics indicate your residential customers continued to make excellent use of your service as the average monthly consumption was 742 kilowatt-hours per customer. This consumption ranks highest in this region and is only surpassed by one or two other municipalities throughout the province. We are certain with a continued load building program you will be able to retain and possibly increase this high level of consumption, which is the best way to maintain rates at their present level or lower."

**T. J. "Tom" Honan,** a recently elected commissioner with New Toronto PUC, brings with him 30 years of local public utility experience. He had been on the staff of the New Toronto PUC from 1931 until he retired in 1961. Mr. Honan was appointed Hydro superintendent in 1955, serving in that capacity until his retirement.

**Alfred Quenneville,** chairman of Sandwich East Township PUC for three months and a commissioner since December, 1963, died recently.

**Strathroy PUC** moved into their new $52,000 office building which was recently added to the existing work center. The building includes a meter room, billing room, board room and offices. The offices will be heated and air-conditioned with a heat pump and the building will set an example for commercial lighting in the community.

**Kitchener PUC** engineer R. M. Senyshen, in a recent interview with the Kitchener-Waterloo Record, predicted that difference in cost between underground and overhead wiring could eventually be reduced to a ratio of three to one. Presently, he said, underground installation is about six times as much as overhead — a decrease from the ten to one ratio of a few years ago. One of the greatest problems, he said, was in finding room for the wires. It had been estimated that it would cost $25 million to put all wiring underground in Kitchener.

**Welland Hydro** will soon be implementing a new billing system for residential customers. A punched-card system will be used in conjunction with a computer service. When the system goes into effect, the bills will be delivered by meter readers. By programming the work, there will be eight due dates each month for the utility, instead of the present three. The new system will also be utilized for work order costing, transformer loading, tabulation of meter records and dates for changing meters, payroll and inventory.

**Windsor** Utilities Commission is planning a gradual switch from a radial to a network system of power distribution in the downtown area due to rapid load growth. The utility has budgeted $70,000 this year for equipment and preliminary construction and planning for the installation.

**Morris McEwan,** formerly a consumer service supervisor in Ontario Hydro's Eastern Region, has been appointed manager of the newly formed Gloucester Township Hydro system. When this utility formally becomes a commission on July 1st, it will be the 358th municipality to join the Hydro family.

**The Brampton and Area Chapter** recently became the newest affiliate of the Electric Service League. Sponsored by the Bolton, Brampton, Milton, George-

town and Woodbridge Hydros, along with the Woodbridge and Brampton Ontario Hydro Area Offices, the inaugural dinner drew 70 persons to hear guest speaker D. C. McNeil, director of the Apprenticeship Branch of the Ontario Department of Labor, discuss provincial certification of electrical contractors. Ken Robertson of Robertson Electric was elected president. □

## AMEU President Honored



*it's the smaller utilities' turn.*

More than 40 representatives of municipal electrical utilities and Ontario Hydro attended a testimonial dinner at Tillsonburg last month to honor newly-elected AMEU president Stanley C. Webster, manager of Tillsonburg PUC.

Mr. Webster, shown accepting the presentation from past-president J. W. Hammond, described his election as the outstanding event of his electrical career — a career which dates back to 1926.

Mr. Hammond pointed out that it is traditional for the presidency to alternate between representatives of small and large communities so that the association could constantly keep abreast of the numerous factors and problems which effect each.

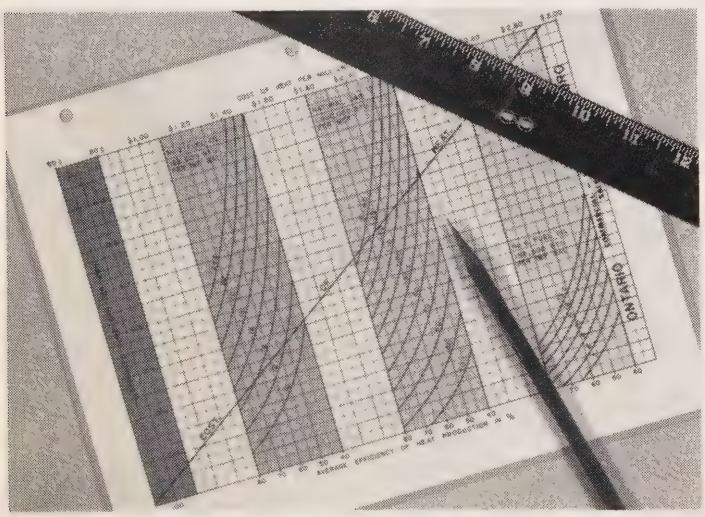
Guests included W. Ross Strike, chairman of Ontario Hydro, and P. R. Locke, chairman of St. Thomas PUC, representing the OMEA. Both spoke of the importance of co-operation within the Hydro family, and the need to keep up with technical developments. □

## Cost-of-Heat Chart

Fuel costs for commercial and industrial buildings can be compared in a matter of seconds with the aid of a new cost-of-heat chart developed by Ontario Hydro.

The chart is printed on one side of a plastic-coated sheet, with instructions for use and examples on the other side. Pencil lines drawn on the sheet can be erased after each calculation.

Hydro designed the chart to provide architects, engineers, and others who




are interested in commercial and industrial space heating with a dependable short-cut to fuel cost comparison.

These handy charts are available from sales officer B. W. Robinson at the Ontario Hydro head office in Toronto. □

## Uranium from the Sea

In the United Kingdom, top scientists think they may have the answer man's worry about the world's future energy resources. They are develop a method of extracting uranium from the sea.

Reporting at the Canadian Nuclear Association's International Conferen Quebec City, this month, Dr. R. Spence, a director of the United Kingd Atomic Energy Establishment, outlined initial experiments demonstrating feasibility of absorbing minute quantities of uranium from ocean water.

The British scientist explained that while the concentration of uranium ocean water is small, because there is so much ocean it could yield up 4 billion tons.

## Canadian Club President

George E. Gathercole, first vice-chairman of Ontario Hydro, has been elec president of The Canadian Club of Toronto.

The Association of Canadian Clubs is a national organization with branches across the country. Its purpose is to foster patriotism by encour ing the study of the constitution and the history, arts, literature and resour of Canada.

A prominent Canadian economist, Mr. Gathercole is a graduate of McMas University, Hamilton, and the University of Toronto.

He was named Provincial Economist by the Ontario Government in 1 and has been closely identified with the province's economic planning ( ing a period of rapid expansion. In 1961, while serving as Deputy Ministe Economics and Development, Mr. Gathercole assumed his present appo ment with Ontario Hydro.

## Kincardine Men Honored



*a watch for a retiring chairman.*

Two community-spirited men were recently honored for their many y service to the town of Kincardine by the Kincardine Public Utilities ( mission, the town council, and employees of both groups. Retiring chairman Leonard Davey, centre, pictured with Mrs. Davey and new chairman Lloyd Hutton, was presented with a watch in appreciation o years service with the commission. He was chairman for 16 years. Also ored was Reeve James Anderson, with 15 years public service to his cr Mr. Anderson had been a PUC commissioner before entering the muni council field, where he served 11 years.

## March Energy Production

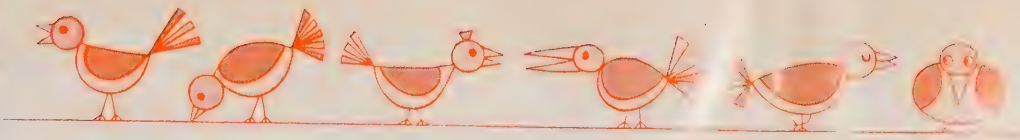
Primary energy provided by Ontario Hydro in March, 1965, totalled 3.82 billion kilowatt-hours, an increase of 8.7 per cent over the same month a year ago.

For the first 3 months of 1965, the total is 11.25 billion kilowatt-hours, up 7.4 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand in March was 3.62 billion kilowatt-hours, 1.4 per cent more than the previous month.

The seasonally adjusted total for March represents 43.46 billion kilowatt-hours at annual rates. This is 312.4 per cent of the energy demand in 1949. □

# OFF THE WIRES



■ Progress on the culinary front is reported from Stockholm where a microwave oven for household use has recently been introduced. As most of us know, a chicken can be roasted in about two minutes by these devices, which utilize very short frequency waves to generate heat in the food by molecular action.

The report claims that no country in the world heats as many portions of food per capita in electronic ovens as Sweden, where they have been installed in restaurants, schools, canteens, hospitals and train kitchens. The new unit is said to be the first in the world designed specifically for home use and it retails in Sweden for $760.

Many commercial cooking establishments in Canada are now using electronic ovens but price has kept them out of the residential kitchen.

Like color TV, costs will tumble and it looks very much as if the average housewife will soon be adding a space-age oven to her electrical equipage. One drawback is lack of browning. A well done dinner roll looks just as pallid when it comes out of the oven as it did when it entered.

But color isn't everything, of course, and if micro-wave cooking means m'lady can get in an extra rubber of bridge or one more end at the curling rink — then pale buns it will be. After all, the death toll directly attributable to white margarine has been small!

■ Duped is the only way to describe what happened to the runners who recently legged it all the way from Ottawa to Montreal and the site of Expo 67 with a torch held high. Here, in the best Olympian tradition, the torch was used to kindle a symbolic flame which was to burn until the 1967 fair opened.

But they hadn't reckoned with the prohibitive cost of gas. The flame was extinguished a few hours later when fair officials discovered it would cost $15,000 to keep it going for two years. Instead, candles costing 20 cents each are replacing the gas-fed urn. A two-year supply will run to about $50.

In chronicling the event in verse, Globe and Mail writer George Bain included these gems:

They lifted the brand from his failing hand
And he spoke as a man in a daze:
"The Minister said that you'd want this torch
To light your eternal blaze,"
And they looked at him then with puzzled eyes,
"Eternal?" said one, "alas,
That's all very well," he said, but, hell,
Just think of the cost for gas."

When will they ever learn? Surely a flashlight could be easier to tote and it could be beamed symbolically on a 100 watt bulb which would then light up and burn away for only pennies a day!

As Westinghouse News points out, the old gag about selling refrigerators to Eskimos is loosing a lot of punch. Fact is, there is more than one Eskimo living better electrically. The news item goes on to tell about Noe Nuvak who became the first of his race at Chesterfield Inlet to own a refrigerator. His 9.5 cubic foot job was shipped from Montreal by minesweeper along the coast of Labrador and across Hudson Bay. The payment cheque was made out in Eskimo characters and drawn on his account at a bank in Churchill.

And if it bounced, we'll bet a collection agent would be thumping on the igloo come breakup.

■ From the Saskatchewan Safety Council comes word that the National Babysitters' Training course is being received with enthusiasm. Offered at five schools in one area, the course attracted 175 youngsters, of which only 15 dropped out before graduation.

In the words of Highway Safety News, "This course can provide valuable service in preparing part-time parents to perform competently in guarding the health and safety of the children placed in their care."

Subjects on the curriculum are not listed but we could suggest a few. How about: "knots you should know for hog-tying over-exuberant kiddies"; "how to get the most out of a refrigerator without altering its appearance"; "easy tricks for keeping the boy friend amused"; and "what to do if you run out of Beatle records".

We would suggest, finally, that a year's subscription to TV Guide be included with each diploma.

While the foregoing might not do much to improve the performance of part time parents, it would surely help keep them happy. That, and the $4.50 most of them earn each hour before 9:30 p.m. when the high overtime rates apply.

■ Any inferiority complexes among electrical utility people brought on by the intangibility of the product they market should be dispelled by a recent ruling of the Income Tax Appeal Board.

The case concerned an income tax appeal by Maritime Electric who had been denied a tax credit under an incentive clause aimed at encouraging processing and manufacturing of goods. The lengthy judgment traced the intricacies of electrical engineering, quoted historic law precedents in both Canada and the United States, and even quoted Lewis Carroll's Through the Looking Glass.

"Electricity is clearly a commodity which is manufactured, regularly bought and sold commercially, and is readily susceptible to being delivered to buyers and to being measured by meter," read the judgment.

The Revenue Department had argued that to be goods, something had to be tangible, a corporeal thing, and capable of being felt.

J. O. Weldon, who wrote the judgment, jumped on the latter requirement. "Electricity is a sleeping giant and is tangible," he said, "that is, perceptible to the touch as many a student electrical engineer or lineman can testify from sad experience."

Mr. Weldon quoted Lewis Carroll's Humpty Dumpty as saying that when he used a word, "it means just what I choose it to mean. The question is", said Humpty Dumpty, "which is to be the master — that's all."

In essence, he ruled that Maritime Electric was in the business of manufacturing.

■ At least one Ontario man is convinced that electricity is tangible enough. He's serving a three month term for living better electrically but not the safe clean modern way. It seems he was making use of this vital commodity tapped directly from a Hydro pole and without benefit of a meter.

■ Everything from dog houses to apartment buildings are turning to electricity for their heating requirements these days but we are indebeted to the Ottawa Citizen for news of an electrically heated lion's den. Unfortunately, the tale has a rather sad twist.

It seems that a private zoo owner near Ottawa had abandoned his 28 charges, which ranged from the common skunk to a South American coati, and the power had been shut off for non-payment of the electric bill. This left Caesar, a handsome four-year-old lion, without heat as well as food — a situation which was quickly remedied when the animals' plight became known.

A bit rough on Caesar in his all-electric lair and the callousness of the keeper is food for thought. We hope the lion gave him some thought as food.

■ Intriguing, too, is a short item which appeared in a recent issue of the Kitchener-Waterloo Record. It read, in part:

"Waterloo PUC meter readers are instructed not to sample preserved jellies, open liquor cabinets or anything of that nature when they enter homes to read meters."

Well, there goes a lot of the fun associated with the meter reading profession. Bad enough that these men must put up with inclement weather and ill-natured dogs, but now they can't even lighten their burden with a teaspoon or two of raspberry compote. Perhaps they will find a legal loophole in the phrase "anything of that nature." Peanut butter on toast makes a tasty snack and it could scarcely be construed as falling within the liquor or preserved jelly categories.

Ingenious chaps, the meter readers will undoubtedly come up with other palatable portions not specifically banned in the regulations. □



TECHNICAL DEPT
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# enjoy the advantages of flameless cooking

Only electric ranges give you the safety of flameless cooking without fumes or dirt . . . cooking speed without wasted heat. Fully automatic . . . precision control. Choose today from many makes and models.

**your hydro**

*LIVE BETTER ELECTRICALLY*

*This is one of a series of advertisements prepared by Ontario Hydro for the municipal electrical utilities of Ontario to assist in their local advertising program.*

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**news · June 1965**

JUNE, 1965

# ONTARIO HYDRO NEWS

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**THE COVER**

The mysterious symbols on our front and back covers will become as familiar as the next door neighbor in the years ahead. Slated to appear on everything from trucks to letter heads and from bulldozers to ballpoint pens, the symbols will come to mean Hydro and all that it stands for in service, progress and dependability. See pages 12 and 15 for the story behind Hydro's new look.

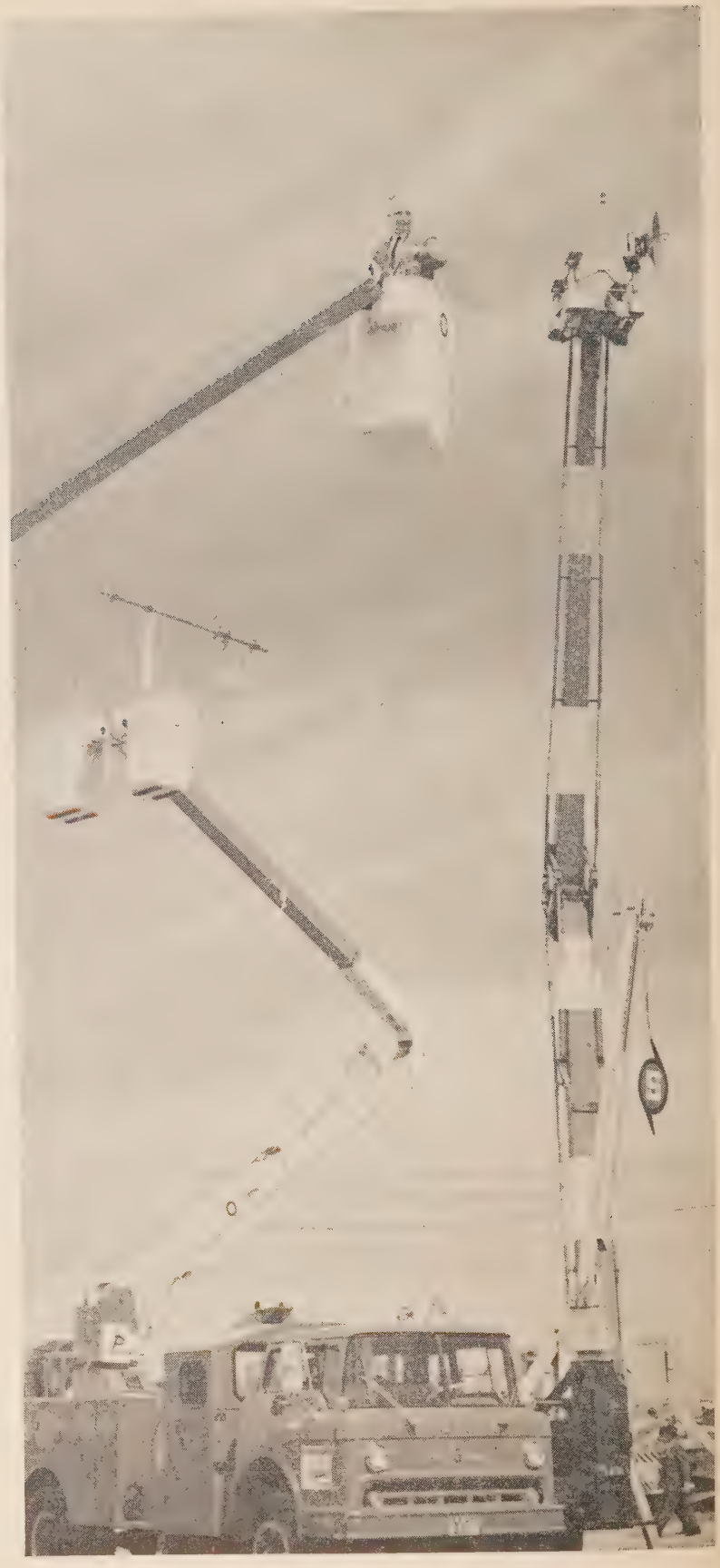
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The sky was the limit at the AMEU vehicle and equipment show but these exhibitors seem to be trying for the moon with one foot on the ground. More pictures and details of the $4 million outdoor demonstration and display are on page six.

**o's success in the never-ending quest for higher standards of service can be ured by the decline in power interruptions to customers over the years**

# THE QUEST FOR SECURITY

by BOB MORROW

s ago, when power interruptions were almost as frequent as ning flashes in a thunderstorm, candles were a handy household to have in reserve. Today, the lights may blink but they usually stay on. hen did you have the last power blackout at your house? If have a hard time remembering — don't chalk it up to good luck. or more than 50 years Hydro has conducted a quest for system rity. It's a never-ending search for better ways of doing gs to provide, as far as possible, uninterrupted service.

ecurity fits hand in glove with a high standard of service," says Harris, supervising engineer of Richview control centre, a modest building near the busy intersection of Highways 27 and 401 on opolitan Toronto's outskirts.

chview is the nerve centre of Hydro's East System which serves nern and Northeastern Ontario. The prime responsibility ystem security rests here.

t everyone who works for Hydro is security-conscious — whether ning, designing, building, operating or maintaining electrical ties, or making an indirect contribution.

rely is the Hydro customer aware of what goes on behind the s in maintaining service:

helicopter patrolling a transmission line searching for possible le spots.

head office computer programmed to analyze a complex operating lem involving security.

forester trimming a tree limb that would cut off power if it ed a conductor.

radio-equipped line truck which saves precious minutes for le crews in restoring power after a sleet storm.

killed linemen using bare hands or special tools to repair a live voltage line while it's still carrying electricity to customers.

n array of equipment, ranging from a transistorized relay the size pack of Lifesavers to a 25,000 MVA air circuit breaker nearly gh as a two-storey house, which senses line trouble, helps locate it akes corrective action automatically.

highly-trained system supervisor tracking an electrical storm at sor and making immediate decisions to avert power interruptions as ves across Ontario.

erating records for 1964 show that the reliability of supply from Ontario Hydro bulk transmission system to more than 100 ary distributing points in Southern Ontario was within a minute on of 100 per cent. "This fraction is in the order of one ousandths of one per cent," said R. H. Hillery, director of operations.

ring the past winter, Hydro weathered a number of severe s and adverse weather conditions without major difficulty. Usually, r interruptions were short and widely scattered. For most mers power continued to sing through the lines like an errupted symphony.

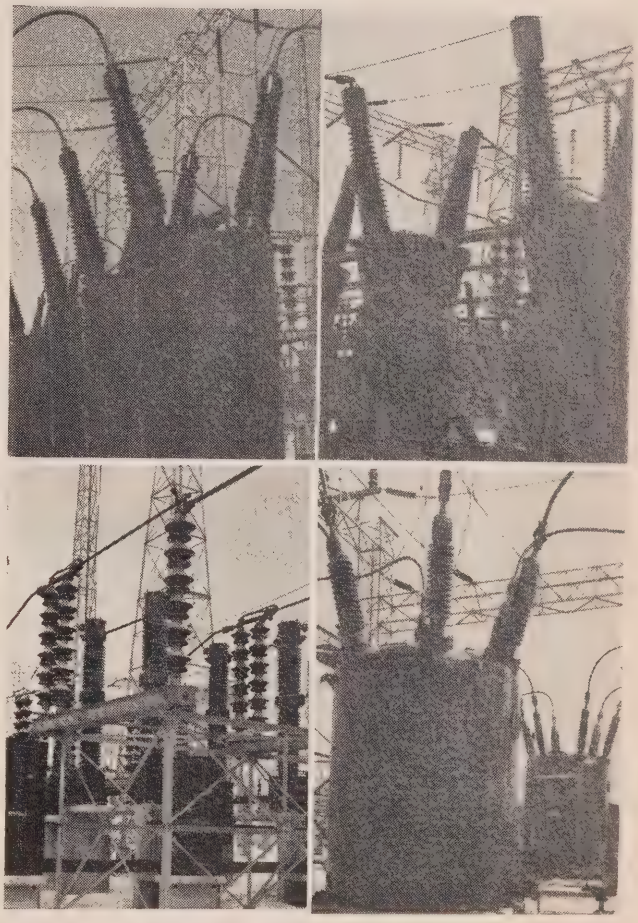
er a half century there has been a steady improvement as a result instaking work, but some of the causes of power interruptions through the years continue to intrigue.

y back in the '30s a line down the spine of Long Point, which nto Lake Erie as far south as Northern California, gave continuous le. Linemen were ordered to check every piece of hardware ermine the cause of interruptions.

ineman on a pole noticed a flash down the line and, on investigation, a cottager raking up dead starlings.

found that the culprit was a small switch bearing a bright red as part of a manufacturer's trademark. A row of starlings had ed on the transformer crossarm and the one nearest the n pecked at what he thought was a red cherry.

co-operation with the manufacturer, Hydro had the switch gned and the "red cherry" trademark moved. The result: chirping gs, and no more power interruptions. *(continued)*



*Advanced automatic reclosure equipment is in the van of the fight for improved service continuity. High voltage circuit breakers of various designs and capacities are shown.*

*Over-stringing being carried out with line in service.*



This spring, a king-sized bird's nest on a transmission line tower was responsible for a 21-minute service interruption in the Wallaceburg area. Construction material used by the birds, thought to be eagles, came in contact with the 115-kv conductors, causing the power outage.

A few months ago two important circuits carrying 230,000 volts were automatically removed from service when strong winds swayed the ice-coated conductors too close together.

The circuits fed 600,000 kilowatts, enough to supply the peak demands of the city of Toronto, from Lakeview Generating Station into the East System. Through skilful operating procedure — described by the men behind the switch as "just routine" — only a short interruption occurred to customers in the Cooksville area before breakfast.

But Hydro set to work installing impact dampers on the conductors so that future interruptions would be averted. Similar transmission towers, which will be used when the 1,080,000-kilowatt nuclear Pickering generating station comes into service, are being redesigned to ensure security and continuity of service.

Hydro officials speculate that the weather conditions which caused the original trouble may never recur, but safeguarding the interests of customers and their investment in expensive equipment is an overriding concern.

Since 1945, when Hydro was freed from wartime rationing of materials, electrical service has been extended to serve approximately 2,000,000 customers in the province in co-operation with 357 municipal utilities. Growth has been particularly remarkable in rural areas, so that over 97 per cent of the rural population has electrical service.

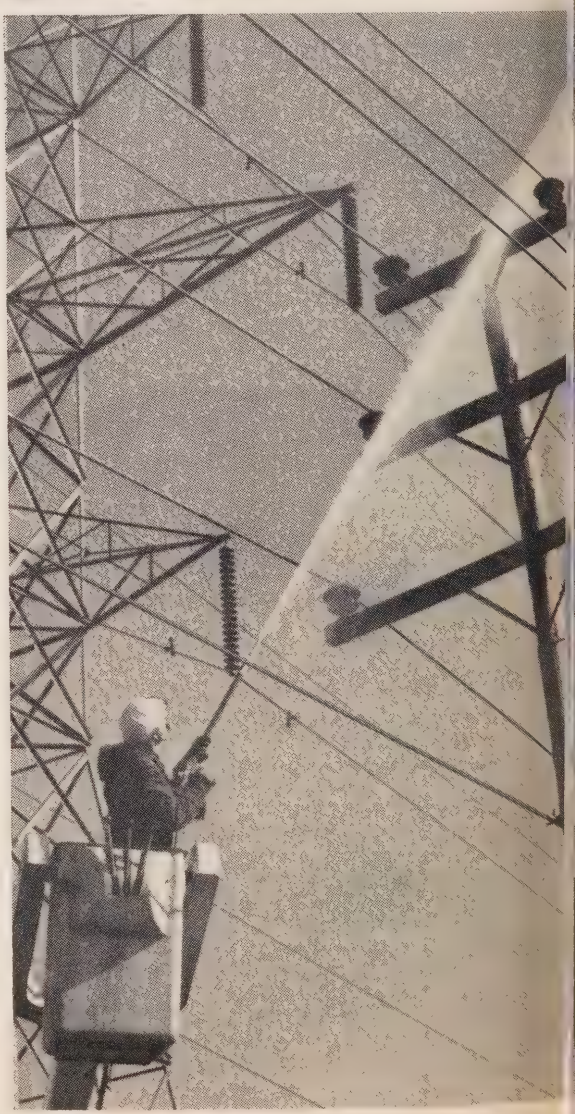
At the same time, security of service has been greatly increased. Alternate routes are available in most areas. New distribution and transmission stations have been spotted across the province. Advanced equipment has been installed on lines and in stations while experience has led to development of improved operating procedures.

"The biggest improvement in rural areas has been the introduction of automatic reclosure equipment," says N. E. MacPherson, former rural service engineer, who is now engaged in special rural system studies. At one time, he points out, a line crew had to make a lengthy trip to close a switch on a pole, but now an automatic device does the same job instantly. If the line is undamaged, the customer sees his light blink but suffers no inconvenience.

Mr. MacPherson says that in rural areas today there are larger numbers of points of supply, more stations tied together and the possibility of alternate feeds — all of which reduce power interruptions.

"Improved security has been one of the motivating forces from the earliest days of Hydro," he said. "Hydro evaluates problems, accumulates data on the nature of faults, and out of these come improvements in equipment and operating techniques."

For the rural customer the positive side is service with few interruptions. But, as well, security has made possible bulk milk cooling to avert spoilage, adequate ventilation for large poultry farms

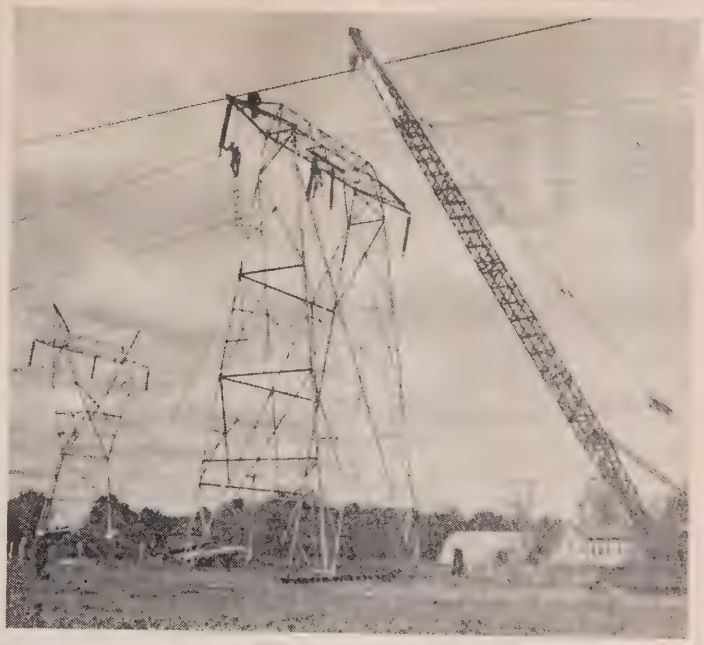


*Dirty insulators can cause service interruptions.*

*rms mean outages but preparation keeps them to a minimum.*



*Crane moves assembled 230 kv tower with minimum dislocation.*





*tools permit maintenance on live conductors.*



*Tree limbs pose threat to slender power arteries.*

with thousands of birds, assured supplies of hot water for many farm chores, and electric heating applications to increase farm output. In fact, most conveniences of city life are now available on the farm.

Service security has also enabled the municipal utilities, who buy bulk quantities of power from Ontario Hydro for distribution, to provide top service. They, in turn, continue to introduce system security measures of their own which have greatly improved continuity of service within the municipality. Customers' confidence in their utilities is reflected by the growth in their average consumption of electricity.

Major elements in security are Hydro's interconnections with neighboring utilities in Canada and the United States which stand ready to supply emergency energy in case of need. But interconnections also serve the vital function of strengthening the system, explains Mr. Harris, of Richview.

Because of its interconnections with utilities having a combined capacity of more than 170,000,000 kilowatts, a major disturbance must occur before Hydro's system is unbalanced. "We are part of a large wheel which requires a great deal of force to overcome its inertia and cause difficulties," he says.

A token of this stability is the fact that Hydro's East System hasn't suffered difficulty on its high voltage network affecting a major proportion of its customers for nearly four years.

What price security? Like the average motorist who doesn't expect two blowouts at the same time, Hydro keeps one spare tire for certain emergencies: For example, standby generators to replace the possible loss of its largest unit. Economics dictate that Hydro's goal cannot be security at any price, but steady improvement within limits consistent with low-cost power.

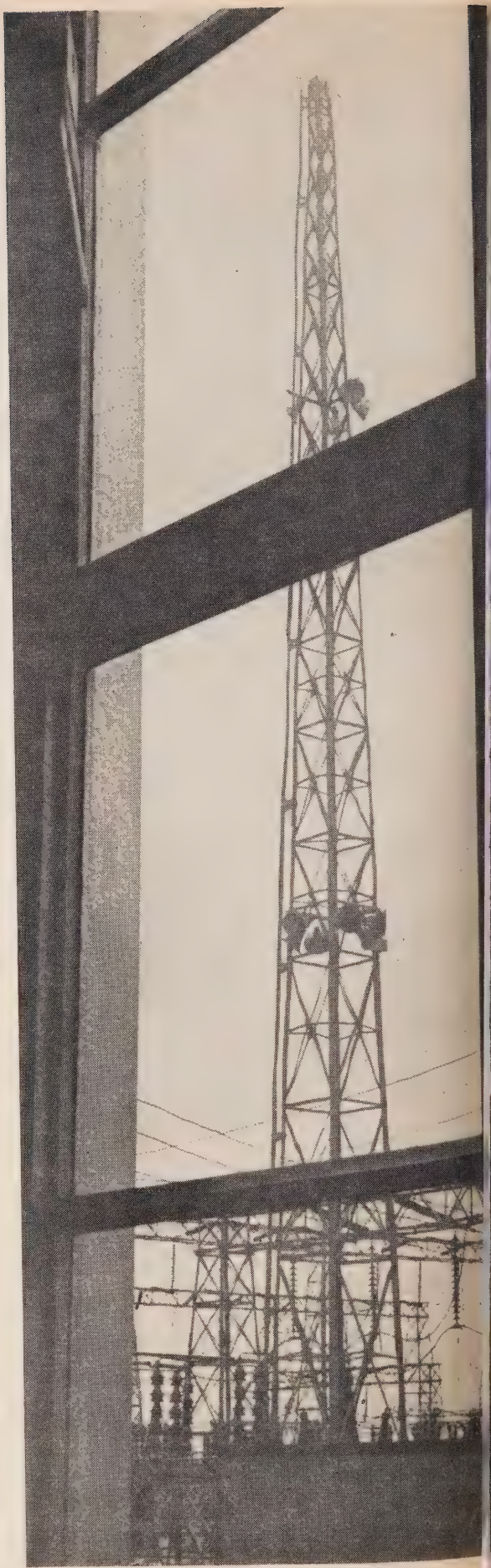
Despite past accomplishments, the search for greater security, at an economic price, still goes on. Customers have become accustomed to a high standard of service and, as Hydro grows, it's sometimes a matter of running to stay in the same spot.

Hydro is now exploring possible use of monitoring equipment to track electrical storms so that preventive action may be taken to avert power blackouts.

Also under consideration is the installation of a computer to make sure that Hydro makes the most efficient and economic use of its generating resources.

Another study is proposed on the use of a small computer at Richview control centre which would serve as a security watchdog for an increasingly complex system designed to meet power demands which double every 10 to 12 years.

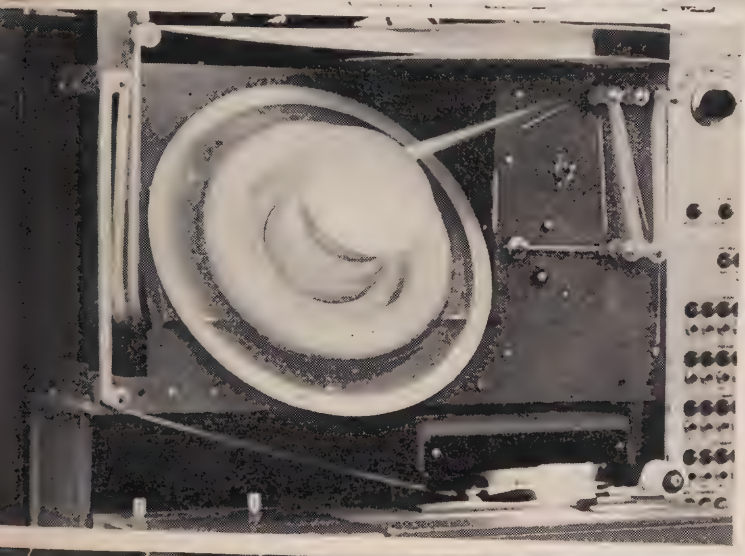
But, whatever decisions are made, the search for an uninterrupted supply of power tailored to customers' needs will continue. Not only must the gifts of nature be preserved for the people, to paraphrase Hydro's motto, but the kilowatts must be delivered when they are needed, in neat, convenient packages and at the lowest possible cost. □

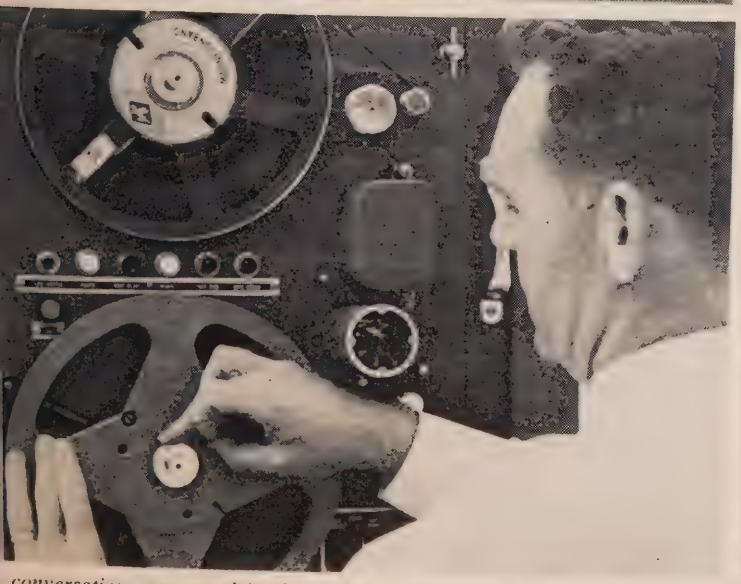


*Primary responsibility for security of vast Hydro grid lies here at Richview control centre.*

*Richview operators have the system and its inter-connections at their fingertips.*







*conversations are taped in the control centre where l decisions of vital importance are regular procedure.*



*Whirring computers and sensitive instruments back up the people whose quest is system security.*





*Tension stringing was demonstrated on section of line erected at the show. Harold Brownhill of Niagara Falls takes time out to soothe aching feet. He chaired committee arranging display.*





# MECHANICAL MENAGERIE

**The blue sky was the ceiling at this AMEU display which brought together $4 million worth of utility equipment**

"A small boy's delight . . . and not a youngster in sight," summed up one television commentator. He was covering the 1965 display of electrical utility construction and maintenance equipment sponsored by the Association of Municipal Electrical Utilities of Ontario.

Of course, many of the 1,000 utility men from across Canada, the United States and as far afield as Bermuda, who converged on Etobicoke Township last month for the two-day event, might admit to being small boys at heart. But they were there primarily to keep abreast of the fast-moving technological changes in methods and equipment used in constructing and maintaining electrical distribution systems.

Arranged by the AMEU with the co-operation of Ontario Hydro, and held at the Commission's A. W. Manby Service Centre, 50 suppliers took part in the display. They were there by invitation and their equipment is available in Canada.

Much of the $4,000,000-worth of equipment was vehicle-mounted or self-mobile, ranging in size from Bell Telephone's mobile microwave tower, complete with 85-foot folding boom, to portable generators and pumpers which can be handled by one man. The AMEU equipment displays are held every second year.

Articulating aerial buckets dominated the skyline throughout the display. Other equipment included trenching machines, diggers, tampers, drills, back hoes and tree trimmers, equipment for washing insulators and a variety of transmission line tools.

Among the equipment making its first appearance at an AMEU display was an articulated, hydraulically-steered vehicle equipped with a radial arm. Another was a street light cleaning and replacement unit complete with hydraulically-mounted platform and in facilities for washing glass. The street l service is offered on a contract basis.

While much of the equipment exhib appeared at first glance to be the same as shown at earlier displays, numerous soph cations were evident on closer inspection

Several exhibitors and Ontario Hy crews demonstrated equipment and meth on a length of transmission line constru for the purpose. Emphasis was on safety t niques during this work, which include setting and replacement, crossarm inst tion, line stringing and tensioning and b hand installing of line hardware. The E trical Utilities Safety Association establi the safe procedure ground rules for demonstrations.

In welcoming delegates, E. F. Burb Toronto, AMEU vice-president, reminded utility men of their responsibility to abreast of technological change.

"This is necessary not only to make vidual utilities more efficient, but to fu

*culated-wheeled vehicle, left, is*
*pped with post hole digger.*
*actor-drawn train helped visitors*
*round sprawling display area.*

*Helicopter view suggests extent of the show. Among exhibitors was a unique street light maintenance service.*





ove service reliability," he said. "This
y, which is the largest of its kind in
America, culminates two years of
ing."

A. Brownhill, Niagara Falls, chairman
e AMEU's vehicles and construction
ment committee, said that the display
ed utility men and specialized suppliers
together regularly at a single location
sulting in savings of time and expense
h.

ne value of this display," he said, "is
ps best illustrated by the distance dele-
travel to attend. At the same time,
suppliers now use the event to unveil
quipment or work methods for the first

ghly specialized as it is, the equipment
represents big business in anyone's
In Ontario alone," Mr. Brownhill re-
, "the municipal electrical utilities
between $3,000,000 and $4,000,000
ly on new equipment of the type dis-
."

# CITY WITH A REPUTATION

## Live-wire load promotion is keeping Peterborough in step with electrical progress

by JOAN ALLEN

Electrically speaking, Peterborough has quite a reputation. Even before the turn of the century, it had earned the nickname "Electric City."

And with good reason. The city had one of the first hydro-electric generating stations in North America, and one of the first electric street lighting systems in Canada. Edison Electric Manufacturing Company had moved into the city in 1889, to be purchased later by Canadian General Electric, now Peterborough's largest industry.

More interesting than past history, however, is the present, because Peterborough, with a population in excess of 50,000, is still very much in step with its reputation for electrical progress.

Biggest coup in 1964 was the announcement that Trent University, the first all-electric campus in North America, would be established on a site near the Otonabee River. First phase of the $70,000,000 project is scheduled for completion in 1970, when some 1,200 students will be accommodated.

Ontario Hydro co-operated closely with the university in the planning stages and when final approval to build was given, a location was chosen just north of the city. Recent annexation brought the site inside the city limits.

As is often the case, the area's loss is the municipal utility's gain, but it all adds up to increased electrical load — the province-wide goal of Hydro and local utilities alike.

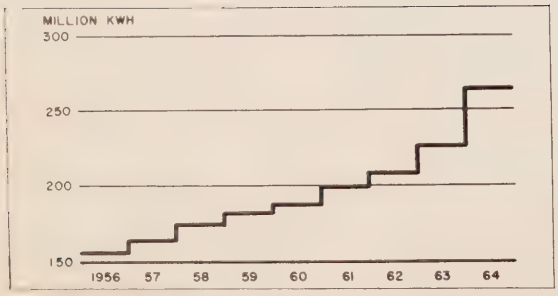
Although the most spectacular, Trent University is by no means the only indication of electrical progress in and around Peterborough.

The utility began load-building in earnest in 1962, with the appointment of Bob Webb to set up a sales department. Since then, the utility's total load, which had been increasing at about four or five per cent a year, jumped 9.1 per cent for 1963, and 16.2 per cent for 1964.

The Commission's sales records tell the story behind the increases. Every apartment building constructed in the city since 1962 has been electrically heated, for a total of 275 suites. Another 725 suites — all potential electric heating installations — are under negotiation. Over 140 homes are electrically heated, and the city has close to 85 per cent saturation of electric water-heaters.

Adding to the enviable load building record are all-electric restaurants, electrically heated schools and school additions, senior citizens' apartments, motels, and an addition to the Peterborough Examiner newspaper plant.

Further evidence that "Electric City" citizens are living up to tradition is to be found in the figures on power use. In 1964, the average annual consumption by domestic customers was 7,325 kilowatt-hours, well above the provincial average of some 6,100

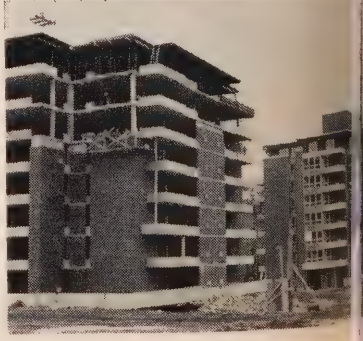



*Steps marking progress on load building front grow longer as utility's sales program takes effect.*

*Pace is lively in Pe borough Area s office as, clockw Jerry Gart Don Dowds and How Warren work load building progr*

*Progress on all-ele motel additio checked by, from Steve Dzienkowski, er; Jack Field, Eas Region Sales and Webb, Peterbor ut*

*Three bottom p illustrate area pro in electric heating. include: twin 46- Ben-Mor apartm Otonabee Public S and Willow V po*







*"Load building program set up two-way communication between utility and our customers", says Howard Powell, manager.*



*Utility's Bob Webb gets the facts from plant engineer Frank Clapp of Eticon Sutures Ltd. Their new building is heated and cooled electrically.*









*This model represents initial phase of Peterborough's Trent University, first all-electric campus in North America. Some 1,200 students will be accommodated when this stage is completed in 1970. The city's George Street was a "marvellous sight" when ornamental magnetite street lamps were installed long after Peterborough's electrical reputation had been established.*



kilowatt-hours.

"Thanks to our sales program, we're in much better position than we were thr years ago," says Howard Powell, utili manager.

"More important, perhaps, a two-w avenue of communication has been esta lished between the people who use electricit and the people who supply it. When t utility was just a supply organization, t customers had to come to us," he says. "N we go to them, and everybody benefits."

Much of the credit for successful loa building must go to the Peterborough co mission, and chairman R. C. Johnston, w has a double-barrelled interest in electrici He is manager of systems engineerir Atomic Power Division, Canadian Gene Electric. He was in Pakistan for his compa when *Hydro News* was taking stock of pr ress in Peterborough and district.

The subsequent announcement that c will design, build and commission a $60,00 000 nuclear station for Pakistan will certa ly add to Peterborough's stature in the n era of nuclear-electric power.

Ontario Hydro's Peterborough area off has also been setting load-building records. 1964, the office exceeded its overall sa quota by 242 per cent — and won the sales performance award for the year Hydro's Eastern Region.

Spear-heading the area's sales program Don Dowds, assistant manager.

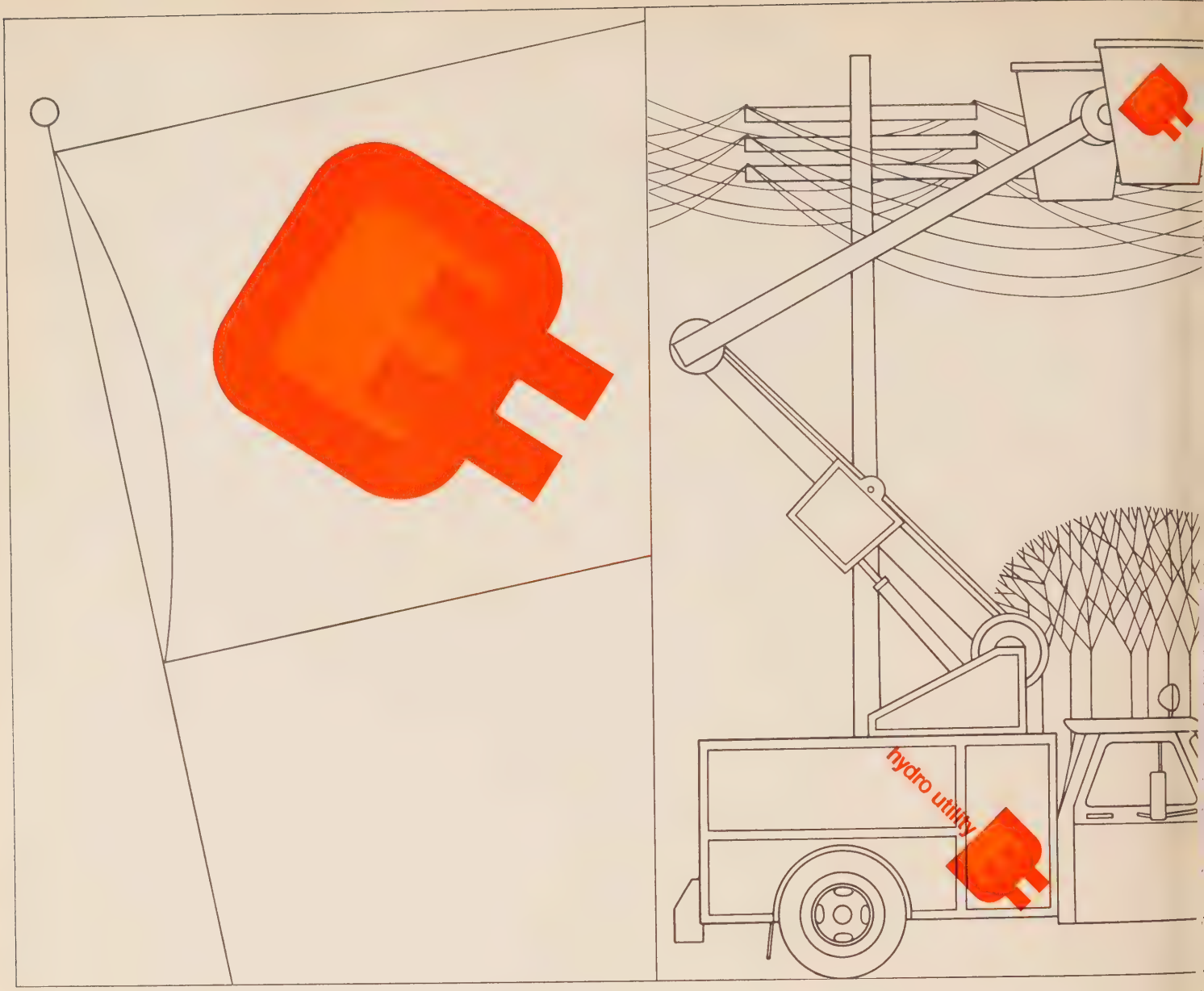
"Our salesmen Howard Warren and Je Gartlan are responsible for a large prop tion of the sales, of course," he says, " the entire staff gets into the act. That's v everyone was invited to the sales perfo ance banquet. How else could we recogi our clerks and outside workers who provi dozens of water heater leads last year."

By the end of March, 1965, the Pe borough area could boast of 130 electric heated homes, including 17 conversions. a total of 664 water heaters were insta last year, with installations for 1965 alre running well above quota.

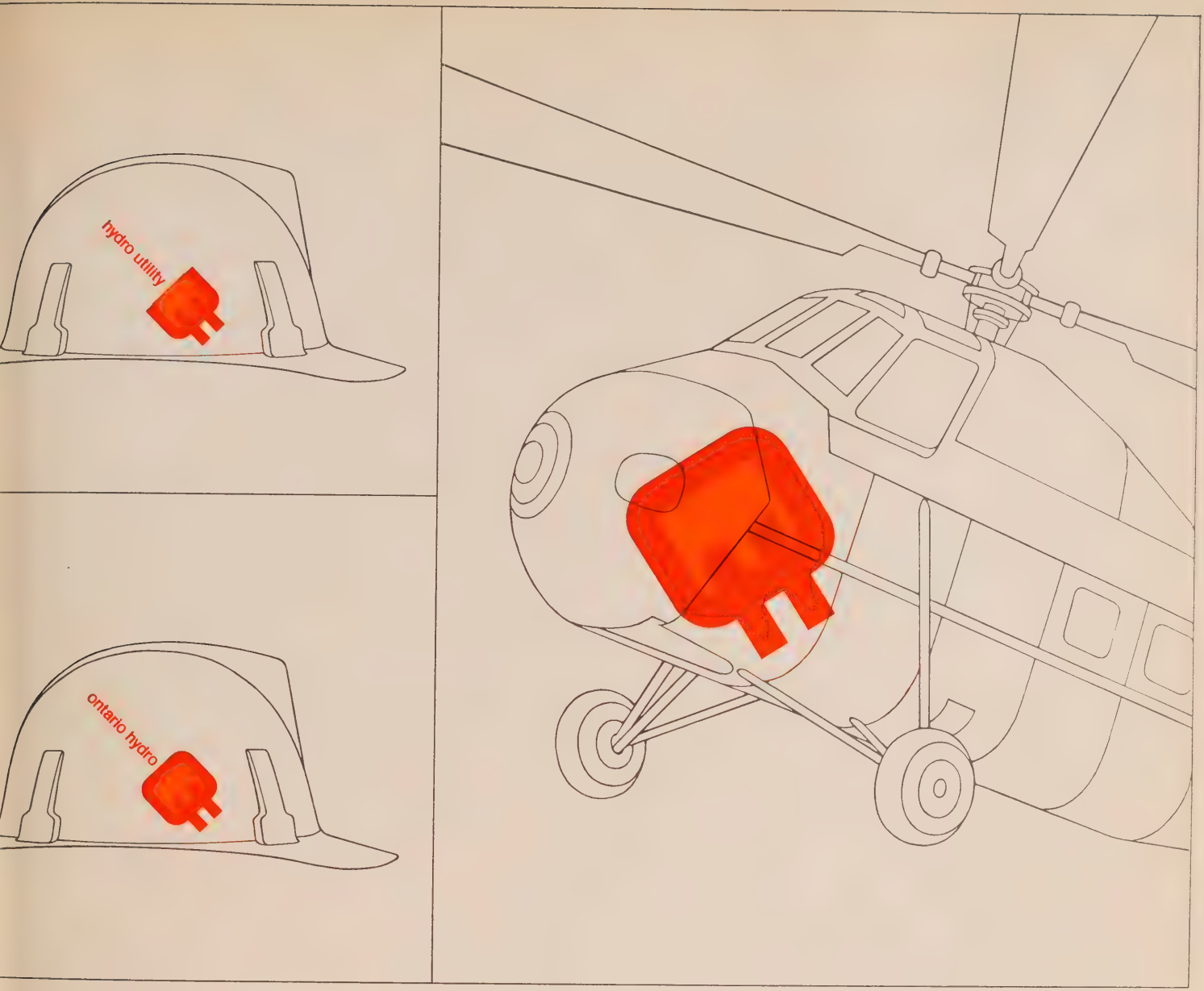
Farms represent an important facet of area sales operations and success on front has been no less spectacular. Last y 100 farm services were upgraded to amperes or better. There are 1,734 farm the area, including several large users of e tricity in "Poultry Valley," so dubbed fo many large brooder operations.

But whoever does the selling, its the watts that count and if there is any riv between the Peterborough Utilities Com sion and the Hydro Area Office, its healthy kind that eventually shows up in service and low rates. Both groups are c cated to maintaining the reputation of P borough and environs for electrical lea ship. Like the city's largest industry — gress is their most important product.

hydro's new look · hydro's new look · hydro's new look ·




**Hydro's New Look:** Man has always lived by symbols, but our society is the most symbol-minded of all time. The words you are now reading are symbols of one kind, and modern mass communications continuously project an overwhelming flow of visual images. The human tendency to think in terms of symbols is reinforced from all sides. They are a kind of mental shorthand, easily and quickly grasped. They represent in simple forms highly complex subjects or concepts—the cross as a symbol of Christianity, for example. The vermillion and orange symbol on the preceding page has been chosen to portray Ontario Hydro as it is today—a dynamic force in the life of Ontario. A variation of this basic symbol proposed for the municipal Hydro utilities offers a means of establishing their relationship to the Hydro enterprise in equally strong, readily identified terms. Why should an electrical utility be concerned with symbols? Why not just get on with business? The reason is that the image or corporate identity of an organization can have a tangible effect on its successful operation. Every company, consciously or otherwise, has a visual appearance or image of some kind, crea in the public mind through trademarks, advertising, symb signs, uniforms, and so on. The image may be good, bac a mixture of both. Being frozen into rigid stereotypes wh no longer reflect things as they really are is a constant d ger confronting business organizations in a time of ra change. The public tends to view organizations and t products on the basis of what they believe to be true, many of these subjective impressions are a result of vis appearance. Ontario Hydro and the associated munic Hydro systems are moving through a challenging and c petitive era of technological change. The new symbol serve as a constant and quickly-identified reminder Hydro is alive to the changing needs of its customers well as its broader responsibilities to the citizens of this p ince. It will keep before the public the nature of the Hy enterprise—an efficient, up-to-date, and service-minde ganization of highly skilled people dedicated to the inter of its customers. What led to the choice of a new H




nbol? Studies including interviews with people inside d outside the organization were carried out over several rs. While they were going on, the Ontario Municipal Elec- Association, representing the province's municipal Hydro ities, asked Ontario Hydro to develop a distinctive symbol ch would emphasize the unity of purpose existing among mbers of the co-operative enterprise. These studies made conclusion immediately apparent: the increasing parti- ation of Hydro and electricity in the province's life and pace and pressure of modern society made a stronger porate image essential. In the past, Hydro and the muni- al utilities have been identified in varying degrees by ny unrelated symbols, signs, illustrations, colors, and so -which failed to display in a forceful way the true charac- stics of the unique Hydro organization. Allan Fleming, of Canada's foremost designers, was commissioned to ate a symbol which would graphically reflect Hydro as it day. Although best known for the CN design of the adian National Railways, Mr. Fleming has developed corporate symbols for many other organizations, including the Bank of Nova Scotia, Mutual Life and the Montreal Trust. The clean, contemporary form of Ontario Hydro's new symbol—whether daring or dignified—is distinctive, yet dynamic. To a remarkable degree, society has come to appreciate that simplicity is the essence of good design—whether in buildings or bikinis. Over the next few years, Hydro's New Look will gradually be introduced throughout the organization in hundreds of applications—on vehicles and equipment, hard hats, uniforms, advertising, and the multitude of business forms used to communicate to the public. Hathaway-Templeton Limited, a Toronto firm with an international reputation in symbol and design work, has been retained by Hydro to co-ordinate design aspects of the program. A symbol can be no better than the organization it represents. Hydro's New Look is designed to identify Hydro in a visual way as an up-to-date public service organization as modern and versatile as the energy it provides to the people of Ontario.

hydro utility · hydro utility
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He placed the H under the O and then positioned the words Ontario Hydro beside the design.



# man of letters ALLAN FLEMING

by LOIS LANE

Man is the reflection of his work. If you go along with this hypothesis then Allan Fleming, the dynamic young man who created the new Hydro symbol, is indeed a mirror of his own internationally famous creations.

He used two letters to imprint an image of the vast Canadian National Railways system on the minds of millions. With a few masterful strokes of the pen he did the same for the Bank of Nova Scotia, Mutual Life, Salada Foods, Montreal Trust and others. Now comes the interlocking OH for Ontario Hydro — all reflecting a clarity of style, a forcefulness and a fundamental simplicity which are the artist's own hallmarks.

Mr. Fleming also created a symbol for the municipal utilities of the province based on the same design to emphasize the Hydro family relationship.

In the exhaustive studies which preceded his work in the field of corporate identity, Allan Fleming reached some interesting conclusions.

"I believe every company has an image to its public and to its employees," he observes. "But the difficulty is that one

# man of letters



PHOTOS BY HARRY WILSON

corporation can mean many things to many people. Another problem is that the image we build up in our minds is not necessarily based on truth, but on what we believe to be true."

Above all, he refutes the view that corporate images are just fanciful abstra dreamed up for well heeled corporations able to indulge in a few luxuries.

"Every company or organization posse a specific public identity," he points out "an appearance which people carry in th minds and recall when making decisions This identity is created by all the visual expressions of the company, its tradema advertisements, promotional material, letterheads and the multitude of busines forms. It is these elements of communic when fused together, which create an impression in the minds of the company customers."

Mr. Fleming believes that if the identi scheme for any corporation is planned s that each visual element is integrated w the other, the result will be a corporate identity that is clear, forceful and unmistakeably individual. It will leave the impression that the corporation wishes impart.

And the more complex the idea to be communicated, the greater the necessit for clarity, simplicity and standardizati Mr. Fleming is convinced.

About the background of his work for Hydro, the artist says:

"In order to establish what the corporat identity of Hydro should be, my first step was to discover how people, both within and without the Commissior actually felt about it." He conducted ma interviews in depth from which he extra recurring sentiments.

"One of the important points that ca out in every interview was that the wor 'Hydro' in Ontario has come to mean electrical energy, rather than a methoc generating power. Through the answers my survey, I reached certain conclusior regarding the objectives and direction c

" he reveals.
also reviewed the symbols of utilities
ghout North America in competition
lectricity and those employed by
utilities such as Hydro-Quebec and
Columbia Hydro.
says:
elt that the monopolistic and
mental image must be de-emphasized
at we should stress Hydro's
e-conscious attitude and its
titive position. We wanted
to appear approachable, and
sive. It was also necessary to bring
benefits of using electrical energy.
we wanted to emphasize
s awareness of the future."
resenting his design, Mr. Fleming
ed a symbol as a visual short cut to
ition of the company. He explains his
letters versus a pictorial approach:
torial symbols create monumental
ns for an organization. The constant
ing and updating can cost a company
deal of money. One af the consider-
keep in mind in designing a symbol
earability over the years."
whole project took nearly six months
lop. Armed with the survey results
er information, Mr. Fleming got
the drawing board. A contemporary,
rif type was selected.
ok the O and the H and the letter
Ontario Hydro," he explains. He
he H under the O and then positioned
ds "Ontario Hydro" beside the
Capital letters were dropped to
s governmental.
ok on a rather electrical appear-
e recalled, "an 'about to be plugged
"
I added the color, a red and orange,
ves the appearance of unlimited
To achieve informality, I tilted the
n its side, pointing downward, and
Ontario Hydro' in what could be
e cord position in relation to the

cord" will be eliminated as the




Members of the OMEA executive hear the artist's thoughts on corporate identity. Left to right are: Dr. R. H. Hay, president; Mr. Fleming; W. E. Edwards, Sudbury; and L. W. Smith, Tillsonburg.

symbol becomes more familiar.

"I felt the design would look good on anything, from posters to drapery fabric and would look exceptionally dramatic on white vehicles," the artist added.

As the symbol's complex and thorough introductory program progresses, the Commission's many hundreds of vehicles will gradually be changed over from the familiar bright red to gleaming white.

Underlying the similarity between the Ontario Hydro and municipal utility symbols is the belief that some public confusion exists regarding the relationship of the provincial authority to the local Hydro systems — a state of affairs which a suitable symbol could help set straight.

And Mr. Fleming's municipal design leaves no doubt about the close Hydro family ties. He simply cut the top off the "O" of the OH symbol and replaced "ontario hydro" with the words "hydro utility".

Both symbols have been presented to the Ontario Municipal Electric Association, which has decided to adopt the visual identity program — leaving the choice of the two symbols up to the individual utilities. Some may elect to use the OH design with local name identification.

Leaning back in his comfortable, high-backed leather chair in his office at Maclaren Advertising Agency, of which he is vice-president and executive art director at 36, Allan Fleming reflected on his creations.

"It will take four years before there is public awareness of the Hydro symbol. Canadian National Railways have planned a nine-year program."

Mr. Fleming, who was brought up in Toronto, says, "I'm a terrible chauvinist. Through my designs, I think I'm trying to improve my environment. The Canadian National design has worn well, and as soon as I did it, I felt I had changed part of my society.

"You see, a symbol can create a state of mind, but its success depends on how the organization supports it," he concluded thoughtfully.

Mr. Fleming's inference was clear. The real job of maintaining a favorable corporate image remains with the people who make up the organization — in this case — Hydro employees. □

**"The preservation of our water supplies is everyone's responsibility."**

One day last summer, the University of Toronto research vessel Porte Dauphine was conducting a survey on Lake Erie when she ploughed into a Sargasso Sea of algae as thick as pea soup.

On investigation, this luxuriant plant life was found to cover an area of more than 80 square miles.

Probing 50 to 80 feet below the surface, the scientists discovered a layer of dead water affecting about one-quarter of the lake. Algae had sunk to the bottom, decayed and taken life-giving oxygen from the water.

Similar masses of green slime drift ashore each year to foul our beaches. A strong easterly wind across Lake Ontario has piled algae against cooling water intakes at Ontario Hydro's Lakeview generating station, causing several shutdowns. Modifications have reduced, but not eliminated, this hazard.

Biological changes are obviously taking place in Ontario's rivers and lakes, and the Greeks had a word for it.

Over millions of years, all lakes tend to become "eutrophic" (rich in nutrients) through natural pollution. Masses of planktonic plants may spread across the water, turning it soupy green, while the deeper layers become devoid of oxygen and upset the balance of fresh water life. Eventually, such lakes may disappear altogether.

There seems little danger that the Great Lakes will disappear, and the director of Ohio's Department of Health, Dr. E. W. Arnold, is among those who refute the suggestion of some that Lake Erie is becoming a giant cesspool. But man is certainly speeding the eutrophication process by fertilizing the algal content with tons of phosphates and nitrates. Normal secondary treatment at sewage plants fails to remove these soluble salts, present in detergents and industrial waste, and ultimately they find their way into the lakes.

Widespread criticism of unsightly but harmless foam is leading to the manufacture of "soft" detergents, the bubble-producing part of which breaks down under normal treatment. In fact, the presence of foam is a good visual indication of other pollutants. And the problem of removing the phosphates remains.

But the algae problem is only one of a series of pressing pollution issues to be resolved in North America.

Canada and the United States are beginning to realize that they have not been blessed with unlimited supplies of fresh water. Although the Great Lakes and the St. Lawrence River form the world's largest fresh water reservoir, this area sustains 70 million people and a gigantic industrial complex.

(*Continued*)



# THE EFFLUENT SOCIETY

by LES DOBSON





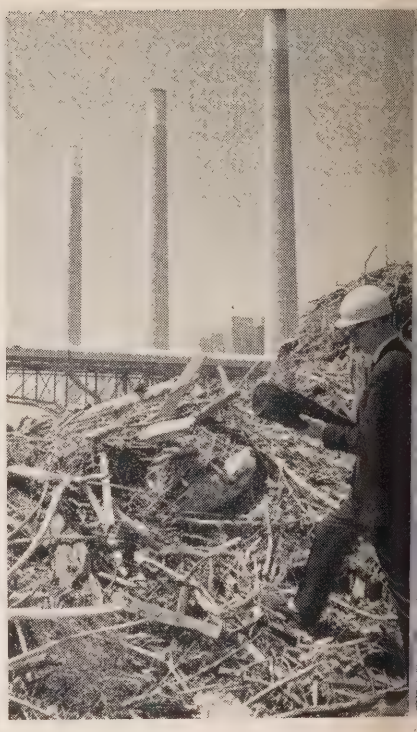


*Gordon Hawkins, chemist at Hydro's Lakeview plant, keeps a close eye on water content. Other photos show nearly knee-deep accumulation of algae along Lake Erie shoreline and University of Toronto's research vessel Porte Dauphine.*

*Harmless but unsightly detergent foam builds up to massive proportions in stream near Guelph.*



*Debris sifted from cooling water intake at Lakeview station is piled up ready for removal by truck.*



Water is vital to this industry. It takes anything from 5,000 to 65,000 gallons of water to process a ton of paper, and Ontario has paper mills producing more than 1,000 tons a day. It takes up to 19,000 gallons of water to produce a ton of finished steel and 300 gallons to produce a barrel of beer.

Our very prosperity is dependent upon ample quantities of clean water, upon low-cost electric power and upon water transport. Yet we continue to pollute waterways with toxic industrial wastes and, until a short time ago, many sizeable towns dumped untreated sewage into rivers and streams.

It's not so much that a water shortage is imminent — the Great Lakes alone cover an area of 95,000 square miles. But we're creating a shortage of clean water, and the cost of treating dirty water is high.

Ontario recognized the seriousness of the situation with the creation in 1956 of the Ontario Water Resources Commission. It was then forecast that 20 years and $2.4 billion would be needed to overtake the backlog of work and keep pace with expansion.

Today the commission is approaching the $1 billion mark. It is assisting more than 200 municipalities in the construction and operation of sewage and water projects costing over $118 million. Its extensive duties also include the strict control of water use, the investigation and control of industrial waste problems and a great deal of survey work. The OWRC laboratories in Toronto rank among the finest of their kind.

Commission biologists and research engineers are conducting an intensive study of the algae problem and ways of tackling it. They are also operating an experimental tertiary treatment sewage plant at Brampton which removes harmful salts from the effluent.

And the commission has powerful legal teeth with which to ensure compliance with anti-pollution practices. Legislation provides for a fine of up to $1,000 or a year's imprisonment, or both, for persons convicted of polluting, or permitting the pollution, of water.

Only last month the commission communicated with 400 industries in Ontario, requesting them to undertake a prompt program of effluent control. Last January, similar letters were circulated to the pulp and paper industry.

Dr. J. A. Vance, chairman of the OWRC, believes that the answer to pollution control rests ultimately with the individual.

"A great deal has been done in Ontario to control pollution at its source, but the situation has been aggravated by the increase in population and the deficiency of rainwater," he says. "There is no easy solution to the problem, and the preservation of our water supplies is everyone's responsibility."

Ottawa recognized the urgency of the si ation in the 1965 budget with a tax conc sion to industries which invest capital prevent pollution from their own operatio Canada's 10 provinces are planning a tional conference on pollution early n year.

South of the border, U.S. Congress is bating a bill which will set tough standa of water quality.

But are we moving fast enough? Some Ontario's water experts have their doubts

Professor George Langford, director the University of Toronto's Great Lakes stitute, thinks there is a reluctance to prov enough dollars for research and a tende to underplay the urgency of the situati Findings of the Great Lakes Institute, says, bear out a United States Public He Service report that we have less than years in which to save parts of the G Lakes from irrevocable damage.

"Even if we stopped pouring chemi into the lakes this instant," Professor La ford says, "their effects would continue many years to come."

Another warning voice is that of Dr. A Berry, president of the Ontario Conserva Council, who says that streams, rivers lakes will become biological deserts un water pollution is checked now.

*Plane dusts a section of Lake Ontario with chemicals in OWRC experiments to combat the algae menace.*



here is greater recognition today of pol- problems than has existed at any previ- me," he told the Ontario Federation of rs and Hunters earlier this year. "But measures, important as they are, will e adequate without the full support of inking people in this country. Pollution ol costs money, and the taxpayer must epared to make these payments in the sts of the country at large."

w, then, are we to meet the growing nd for cool, clear water? The answer to lie in the willingness of the indi- l to accept responsibility, greater ex- tures both for research and water treat- and improved co-operation between oring states and provinces.

lution control is nothing new to several y-populated European countries, which far less water than ourselves. In Ger- sewage treatment has reached such a hat water is drunk and re-used up to nes before it reaches the ocean.

seful lesson might be gleaned from the River basin, crammed with people and ry, where flows are relatively small. a charge is levied upon every mun- y and industrial plant in proportion to llution it produces. This imposes an nic incentive to end pollution and pro- funds for collective measures to cope .

Professor Langford says he judges the maturity of a nation by the way in which it handles pollution.

Let's have the world know us as the Affluent, not the Effluent, Society. □

## A POWERFUL THIRST

Pollution means filth and it's a particularly dirty word to the chemists at Ontario Hydro's thermal-electric power stations.

For even with the transition from hydro-electric to coal-burning and nuclear stations, Hydro is still dependent on vast quantities of pure water.

Feed untreated water into Lakeview's thirsty boilers and they'd be out of action in a matter of hours. Allow debris to clog cooling water intakes and the station would come to a halt within minutes.

By the time Lakeview's eight coal-burning units are churning out their full quota of kilowatts in 1968, the station's cooling system will borrow more than 1,300,000 gallons of water a minute from Lake Ontario. This is several times the average rate of consumption of Metropolitan Toronto.

In addition, the station's complement of boilers will need approximately 600,000 gallons of demineralized water a day to replace that lost in the steam cycle.

Lake water bound for the boilers is chlorinated to oxidize and destroy organic matter then treated with lime and a coagulant to remove sediment and part of its magnesium and calcium hardness. It is filtered, dechlorinated and finally demineralized by an ion exchange process.

Grills and rotating screens across the intakes sift algae and debris from the cooling water, which is then pumped through condensers. Lakeview's chemists chlorinate the supply at intervals to prevent algae forming in the condensers under certain water and temperature conditions.

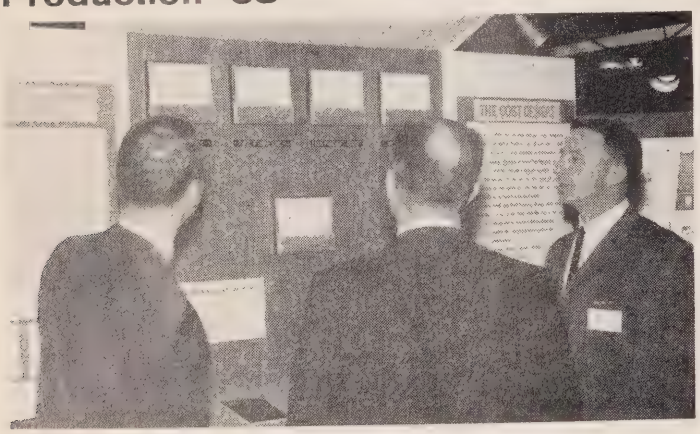
Heavier chlorination is necessary at the R. L. Hearn generating station in east Toronto, where it is necessary to use more heavily polluted cooling water.

Several shutdowns at Lakeview have resulted from large concentrations of algae blocking intake screens, and various types of mesh are now under trial. High-powered water jets are used to wash weed from the screens. Surface debris is diverted from the intakes by a floating boom

But it all cost money and Hydro takes care to keep its own skirts clean. The water borrowed by the Commission's huge thermal-electric plants is returned to the source at least as pure as it was on receipt. □

# ALONG HYDRO LINES

## Production '65



*you put the data in here . . .*

An electronic version of the cost-of-heat chart developed by Hydro as a handy guide to heat cost comparisons drew much attention at the third National Industrial Production Show, held at Exhibition Park in Toronto recently. Visitors to this massive international showcase, featuring displays by 550 exhibitors, were able to dial data into the computer to obtain on-the-spot estimates of the cost of heating with electricity and other methods.

Hydro's exhibit also included a 20-foot model of a large-scale nuclear electric plant and a photo presentation of various industrial electrical applications.

Sales representative Doug Reid of the Eastern Region is shown guiding visitors in the use of the cost-of-heat calculator. □

## Light Water Cooling

Atomic Energy of Canada Limited is forming a new design group, associated with its Power Projects section in Toronto, to develop an advanced type of nuclear power reactor. It will be known as the CANDU Boiling Light Water Reactor.

As at the Douglas Point nuclear power station, the new type reactor would use natural uranium for fuel and heavy water as the moderating material to make the uranium "burn". The main difference will be the use of ordinary water (light water) in the reactor cooling system. Steam would be generated by boiling light water within the reactor, eliminating the need for steam generators.

Studies have indicated this type of station may have lower unit capital costs and lower unit electrical energy costs than those of the present Canadian heavy water nuclear power stations. AECL cautions that several years of design, development and prototype construction and operation will be necessary before actual power costs can be assessed. □

## Hydro Engineering Changes

Five new Ontario Hydro management appointments have been announced by Chief Engineer H. A. Smith as part of a re-organization of the Engineering and Construction divisions.

P. G. (Pat) Campbell, former director of Construction, has been named assistant chief engineer — Design and Construction. Mr. Campbell will coordinate the work of three new divisions: Generation Projects, Stations Projects, and Transmission and Distribution Projects.

Directors of the new divisions, who will assume the responsibilities formerly delegated to the directors of Engineering and Construction, are: J. S. Crerar, Generation Projects; W. E. Taylor, Stations Projects, and Marino Fraresso, Transmission and Distribution Projects. H. A. Jackson is appoint assistant director of the Generation Projects Division.

"Re-organization of the two divisions has become necessary because of t greatly expanded scope and complexity of their operations," Mr. Sm stated.

## Nuclear School Underway

A contract to build Ontario Hydro's new nuclear training centre has be awarded and first workers are on the site.

The $225,000 one-storey brick-and-block structure is being built at t Nuclear Power Demonstration plant at Rolphton, Canada's first nucl power station. NPD opened in 1962.

To be completed by September 30, the 12,000-square-foot building v replace the centre's temporary quarters. It will have five laboratories for velopment of operating skills, four lecture halls and other facilities.

The training centre is being expanded to keep pace with the grow role of nuclear-electric stations in Ontario and to train workers from ot countries buying Canadian-type reactors.

The 200,000-kilowatt Douglas Point Nuclear Power Station on Lake Hur which opens next year, will be operated by Hydro staff trained at centre.

## APPA Awards to HEPC

Ontario Hydro captured awards in all three of the 1965 annual Ameri Public Power Association contests it entered recently. Announced at group's annual convention held in Los Angeles, last month, they were acc ed by James A. Blay, director of public relations for Ontario Hydro.

Certificates were presented for the best annual report and for Tall Points, the Commission's policy newsletter.

The power use achievement citation was presented for the electric h ing information centers which were the focal point of two specific progr presented last year. The first was a carryover of the 1963 supplemen heating program and the second — the home modernization program wh included adequate wiring, lighting, home cooking, water heating and laun ing as well as home heating.

## Accident Prevention Director

Warren L. Clifton, 40, has been appointed Ontario Hydro's director of Acci Prevention. He succeeds Robert Harrison who died recently.

Mr. Clifton joined Hydro in 1947 after graduation from the Universit Toronto in electrical engineering. He has served in the accident preven field for the past 12 years, latterly as safety and fire engineer at Hyd Head Office.

Mr. Clifton is first vice-chairman of the public utilities section of National Safety Council and a member of the Ontario Society for Sa Engineering.

## Widdifield Hydro Holds First Meeti

Widdifield Hydro Commission held its first meeting recently and appoi Reeve Don King as chairman. Shown checking Hydro facilities on the t ship map from the left, are: J. W. Chapman, commissioner; Reeve D chairman; Edwar Snook, consumer service superintendent, Northeas Region and (standing) Kevin Ryan, commissioner.

Ratepayers voted in December, 1964, in favor of a township-ov system and the township will take over on July 1. At that time it will



*neophyte commission gets down to business.*

: Ontario Hydro with a cheque for $1,250,000 for the purchase of the ribution system. □

## ommissioner at 95



*on had still to develop the light when this man was born.*

h St. Denis, who celebrated his 95th birthday this year and is probably ldest Hydro commissioner in the province, has been presented with an d from the Ontario Municipal Electric Association. It recognized his con- ion to Vankleek Hill Hydro. A member of the commission since its be- g 10 years ago, Mr. St. Denis is seen accepting the award from his son, r Patrick St. Denis, who is also a Vankleek Hill commissioner. E. C. , chairman of the utility, center, acted as master of ceremonies and d the appreciation of the commission to Mr. St. Denis, who is a former □

# UNICIPAL BRIEFS

**ing recently** to the local Lions Club, Dr. J. E. Wilson, Barrie PUC chair- said the closest co-operation between the provincial and local com- ons "is absolutely essential" in order that the province-wide Hydro ization may function smoothly and efficiently. Among the subjects he ed on in his wide ranging address was the Barrie commission's practice ving members of the senior staff attend commission meetings on on.

art from their helpful suggestions", he explained, "the staff receives nd information as to policies and their implementation. It is our policy port and protect the staff against unfounded criticism."

Wilson closed his talk with reference to increased competition and costs of labor and materials. "As in any other business", he said, ust keep sales volume up to keep unit costs down."

**of annexation proceedings** seems about to break out across the ce which could alter the boundaries of several municipalities and the utilities providing their services. Those areas where annexation prevalent include North Bay, Ottawa, Preston-Galt, Kitchener-Waterloo rnia.

ng the most far reaching is a plan to incorporate the municipalities rside and Ojibway, and parts of the townships of Sandwich East, South st, into the City of Windsor. Already approved by the Municipal Board, heduled to take place in 1966, the change will make Windsor the largest city in Ontario.

**Lofquist** was the subject of a recent "We Salute" feature in the Oak- ily Journal Record. A local appliance dealer, Mr. Lofquist is in his ar as a member of the PUC.

**as Edison designed motor,** found at a wrecking site near the Don Toronto, has been donated to Ontario Hydro's historical collection k Kehoe, Orillia Water, Light and Power commissioner. The engraved n the side of the motor shows that it was the 19th motor manu- d by the company.

**Hydro** is planning additional storage space and workshop facilities ervice centre. A. R. Turton, general manager, says they expect to e addition this fall, along with their eighth substation.

**subdivisions** in Oshawa will have underground wiring in the future. City council recently approved a motion that subdividers pay the cost involved before the subdivision is approved. In Oshawa, installation cost of underground is estimated at an additional 50 cents per foot.

**Frank Jannaway,** general manager of York Township Hydro, has resigned to become assistant general manager of Leeds and Northrup Limited, manufacturers of precision instruments, in Toronto. He will be responsible for production, engineering and finance.

**Dunnville PUC** has proposed that the town's floral clock be restored this summer after two years on the sidelines. They hope that this floral timepiece, like its counterparts at Queenston and Guelph, will become a major tourist attraction.

**Representatives** of the electrical industry from area municipalities met to establish the Listowel and District Electric League recently. Municipalities represented included Harriston, Palmerston, Drayton, Atwood, Milverton and Listowel. William Davis of the Ontario Electrical Service League guided the group in its organization. Earl Bowman of Listowel was elected president.

**The Medallion parade** of all-electric homes at Owen Sound drew over 3,000 people on the first two days. Betsy Johnston of Owen Sound, who was chosen Miss Electric Heat during the Winter Carnival, was an added attraction.

**Englehart school board** specified electric heat for their new District Central School. They liked the idea of individual classroom thermostatic control and the clean and quiet operation. The board was also impressed with the favorable installation and operating costs.

**Sarnia Hydro's** commercial load is expected to rise three per cent above normal this year due to the popularity of electric heating for apartment projects.

**A plebiscite** on a proposal that the Town of Pembroke purchase the Pembroke Electric Light Company's distribution system within town limits is expected this year, according to Deputy Reeve Donald Simpson. Mr. Simpson is chairman of the special committee appointed to negotiate with the company on behalf of council.

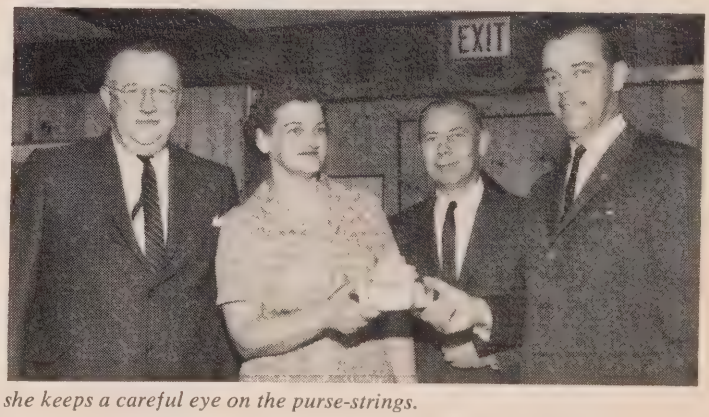
**Stratford PUC** kicked off its 50th anniversary celebrations with a banquet at which the first general manager of the commission, A. B. Manson, recalled colorful highlights from the past. Mr. Manson served from 1928 to 1954. Robert Mountain, chairman of the utility, called the event "a birthday party of which we can be very proud." He used an electric knife to cut a birthday cake.

D. M. Seath, general manager, announced that the banquet was just the first of their Golden Anniversary celebrations and that the PUC plans open house for their various operations in the summer months.

**David S. Thomas,** 59, superintendent of Port Colborne Hydro, died recently following a lingering illness. Mr. Thomas commenced his long electrical career with Ontario Hydro and worked with Humberstone Hydro before it was integrated with Port Colborne as the result of annexation. He served with Port Colborne Hydro for 25 years.

**William E. Perdue,** chairman of Clinton PUC for the past 20 years, died recently in London. He was 82. Mr. Perdue, who had been a member of the Clinton commission for more than 30 years, spent 44 years in the hardware business from which he retired in 1963. □

## 25 Years of Service




*she keeps a careful eye on the purse-strings.*

Mrs. Ruth Clyne, secretary-treasurer of the Amherstburg Public Utilities Commission, was presented with an engraved watch by Leonard Duby, chairman, to commemorate her 25 years of service with the utility. Also pictured at the presentation are Mayor H. Murray Smith, left, and Gerald Coyle, manager. □

## Hydro Goes to the Barber



*hair tonic and vintage motors.*

Woodbridge Hydro invaded the windows of the local barbershop and newspaper offices recently to display electrical appliances and motors dating back 50 years . . . a visual way of demonstrating electrical progress since the local commission's beginning in 1915. Pointing to the display, which included an antique electric range, irons, toasters, a fan and vintage motors, is Bert Young, secretary-treasurer of Woodbridge Hydro. □

## Nuclear Conference at Quebec

That this country's nuclear industry is well out of its infancy was demonstrated in Quebec City last month at the fifth annual Canadian Nuclear Association Conference.

Speakers from Vienna, France, England and the U.S. confirmed Canada's prominence in the field, and Ontario's in the area of electricity generation.

With other natural resources being rapidly used up, nuclear power was hailed as the solution to at least two major problems. Besides producing power, it holds the promise of assuring adequate supplies of fresh water by de-salting sea water.

The 250 delegates heard analyses of future needs, costs, manpower requirements and proof of the industry's enviable safety record.

Ontario Hydro representation included men from the engineering and operations division, as well as Medical Services, which supervises radiation protection for workers. □

## Long Service at Leamington



*she served Hydro for more than 40 years.*

Freda Johnson, following in her father's footsteps in a career with Leamington PUC, has terminated an association which has spanned more than 40 years. She began with the Hydro department in 1923, working for her father, L. F. Johnson, then superintendent.

At a recent banquet, Charles Howdon, commission chairman, and Jack Anderson, manager, presented Miss Johnson with gifts in appreciation for her service. Staff members also recognized her contribution. □

## Transmission Line Expert Dies

Arthur E. Davison, whose work in the field of electric power transmission won him international acclaim, died recently in Toronto. He was 84.

Mr. Davison was transmission engineer for Ontario Hydro at the time of his retirement 13 years ago after 42 years service.

His reputation was perhaps best summed up by one of the American delegates to a recent meeting of the Canadian Electrical Association.

"I never think of Ontario Hydro without recalling Arthur Davison," said. "He furthered the whole art of transmission line design and did much as anyone to spread the word of Ontario Hydro in the United State

Mr. Davison was particularly well known for his work in the field "galloping" and vibration in conductors. He was the author of m papers on the subject, active on several scientific committees, and trave extensively in Europe in connection with his work.

## Harmon in Service

Another new power producer has been brought into service in Northeast Ontario.

The first of two units at Ontario Hydro's Harmon generating statio producing power and the second is nearing completion. Their combined put will be 129,200 kilowatts. Two additional units can be built w required.

One of three new Mattagami River developments, Harmon is situ 13 miles down-stream from Little Long generating station, complete 1963. Kipling generating station, two miles below Harmon, will go service next year.

## Close Niagara Power Canal

Ontario Hyro's Chippawa power canal at Niagara Falls has been close start the final phase of the two-year "face-lift".

The 44-year-old canal carries water from the Welland and Niagara ri to the Sir Adam Beck-Niagara generating stations at Queenston.

First closed in May, 1964, for deepening, widening and general r work, the canal was re-opened last fall in time for the peak winter der season. Scheduled for completion by November, the project will incr water flows by 6,500 cubic feet a second, boosting output of the stations by 11 per cent.

Nearly a mile of canal will be deepened up to 10 feet, and a short se widened in this year's operation. About 100,000 tons of concrete will be on the floor and lower walls. Gunite work, which entails blowing con under pressure on the upper rock walls, will also be completed. Work is expected to reach a maximum of 400 men this summer.

## Serpents and Substations

Over the years Hydro has suffered power interruptions caused by a va of creatures ranging from woodpeckers to eagles and from moose to b — but it has been spared reptile trouble.

Not so the Tennessee Valley Authority. Plagued by power outages c by snakes climbing the structure of a large substation near Columbia, T TVA set up a test centre to devise means of dealing with the world's troublemaker.

A "snake wanted" appeal went out to field maintenance crews and a bank was established. Chemical repellents proved ineffectual and e ments with electric fences had to be curtailed when the snake bank ra The answer turned out to be a mechanical barrier. Fine mesh screenin fastened to the link fence surrounding the substation. The top of the was turned outward so that the snakes, unable to negotiate the ben to the ground.

Among the suggestions turned in by a solicitous public: the use of runners; kerosene-soaked ropes; and "the kind of garlic used in our F and Cajun cooking."

## April Energy Production

Primary energy provided by Ontario Hydro in April, 1965, totall 3.5 billion kilowatt-hours, an increase of 4.3 per cent over the san month a year ago.

For the first 4 months of 1965, the total is 14.75 billion kilowa hours, up 6.6 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand in Ap was 3.54 billion kilowatt-hours, 2.2 per cent less than the previo month.

The seasonally adjusted total for April represents 42.52 billi kilowatt-hours at annual rates. This is 305.7 per cent of the ener demand in 1949.

# OFF THE WIRES

■ Jumping to conclusions doesn't usually involve much physical effort but it can be mighty hard on the constitution as one serviceman with the Leamington PUC is ready to testify.

Called to a local restaurant recently on a water heater call, the service rep soon discovered the trouble and replaced a defective electric heating element. Before leaving, he advised the owner that he might notice a little bit of smoke coming from the unit as the new element heated up.

Driving by the same eating establishment about an hour later, the serviceman was horrified to see huge clouds of smoke billowing out of the front door and he could hear fire sirens in all directions. Faced with the dilemma of confronting the owner about his "little bit of smoke", or joining the Foreign Legion, the service man bravely chose to investigate.

Things were not as they seemed. The commotion was caused by fat boiling over into the open flame of a gas-fired deep fryer.

■ Oddballs among our well regimented ranks can take comfort from the words of Professor Paul Pigors of the Massachusetts Institute of Technology. He claims every company should have a few dissenters, noncomformists, screwballs and generally unreasonable employees.

"A reasonable man rocks no boats" — the professor points out, "he is content to go along with things as they exist. But the unreasonable man is a dissatisfied worker who will come up with new ideas."

He was not advocating that corporate organizations become loaded with lunatics, however, and, as professors often do, he added a word of caution.

"Nonconformists can make a contribution, but the situation must be faced realistically," he said. If somebody comes up with a really crazy notion — like hanging barrage ballons over the plant — the oddball should be rolled out."

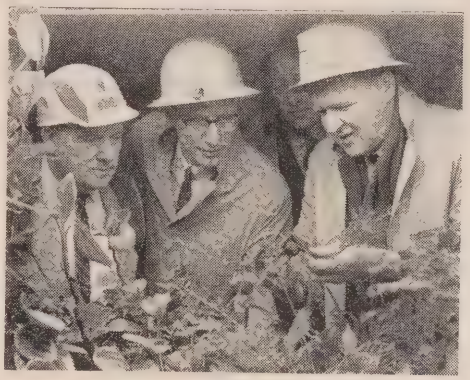
And if the professor himself seems a little on the off-beat side, his address did make a lot of sense. He said the key to modern management was to allow employees to participate in decision-making so they will feel they have a personal stake in setting and attaining the company's objectives. Workers who share and identify themselves with a company's purposes, he contended, would be much more productive than employees who are simply directed by strict orders.

To re-enlist employee interest, he suggested that workers' committees be formed whose job would be to come up with ideas for improving operations. He said the committee system works better than the old suggestion box technique because the former develops team spirit and fosters an over-all approach to company goals.

A second speaker of considerable renown on the same program also urged management to encourage rather than hamper employees who question and seek to change the existing work process. He said organizations can encounter disaster if they have people who do nothing more than follow rules.

All in all, it sounds as if the odd renegade will have to be tolerated. And if regimentation proceeds at its present pace, could be that oddballs will become a rare and much sought-after commodity. Personally, we'd say the supply will always be adequate.

■ Good gardeners caution against planting seeds too deep but the men who grew these plants really got carried away — they went straight down for more than a thousand feet. Fact is, the plants, ranging from African violets to begonias and from tomatoes to carrots, are flourishing



at the bottom of the Canadian Rock Salt Company's mine at Windsor. And they are doing very nicely without the aid of sunshine.

Fluorescent lighting is substituting for old sol — proving a pet theory of R. M. Laurie, former manager of Western Region, who had an abiding faith in the miracles electricity could perform. His theory was put to the test by Dr. David Wilson and John Johannesen of Western University's botany department.

Dr. Wilson is not suggesting that the future of horticulture is tied in with the salt mines. "The situation was there," he says, "and we were just curious."

■ Rain-making has its problems as Natural Resources Minister Rene Levesque of Quebec is finding out. They are after his scalp in the Lake St. John region for causing too much rain. Artificial rain-making by cloud seeding comes under Mr. Levesque's department and he is the target of Operation Umbrella, a movement of women who claim cloud seeding is harmful to health and dampens summer cottage weather and Monday wash-days.

Local farmers have joined the hue and cry charging that artificial rain has harmed their harvest.

If the charges are true, then the Ontario government should try and persuade Mr. Levesque to put on a rain dance in the Great Lakes area where some extra precipitation would come in handy.

Nonsense or not, the furore in Quebec suggests what's in store for those who would tamper with the weather. It's been groused about down through the ages, of course, but never before with the possibility of a political tinge.

■ Elsewhere in this issue is an interesting yarn recounting how improved methods and equipment have reduced power failures and relegated standby light sources such as candles and oil lamps to the attic. Having completed the editing, we were leaning over the typist's shoulder in an effort to speed up production when everything came to a halt. The electric typewriter went dead and so did the elevators, lights, office equipment and everything else except the people who keep head office humming.

Fortunately, the outage, originating at the Strachan transformer station, only lasted a few minutes and power was restored in time to get on with our story about system security. Rather than scuttle our argument on improved service, the trouble seemed to strengthen it. Few staffers could remember the last time they legged it down from the 11th floor.

■ Two months ago in these columns we mentioned Mr. Koblensky and his plans to market a low-cost electrically operated window. Further developments indicate he will start production in a Kitchener plant, in July. Thirty persons will be employed initially, and plans call for manufacturing locations across Canada where windows will be made to meet local weather conditions and building practices.

The windows will even open and close with a change in temperature and a gauge will be available to close the windows automatically when it rains.

More power to Mr. Koblensky and his power windows — but he may eventually find himself bucking a trend towards windows which neither open nor close. With the growing emphasis on year-round weather conditioning, and ever improving lighting methods, windows may disappear altogether.

■ All jobs have their frustrating moments, we suppose, but none more than the work performed by two roosters in the London area. They chase each other over sealed wire cages housing 10,000 sexy hens and their sole purpose is to keep the building free of cobwebs. Skeptical when the hatchery told him that roosters flapping about over the hens would keep away the cobwebs, the farmer went along with the suggestion and found that it worked.

A pretty cold-blooded arrangement, it seems to us, and it would serve them right if the cages sprang a leak. □

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# hydro utility

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## can we beat the beetles?

see page 11



ontario hydro

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# ONTARIO HYDRO NEWS

JULY - AUGUST, 1965


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Distinctive new Hydro symbol and colors ap
ing on the cover have attracted wide-spread a
tion since their introduction in mid-June. Hy
symbol co-ordinator (see announcement, page
reports many enquiries from utilities and se
have already dressed up equipment with the
Look, incorporating the OH symbol with the
of the local commission. Photos show the
Ontario Hydro vehicles with the new colors.
DeMaio, manager of Manby Service Centre, p
to brilliant vermilion and orange cross hat
which will appear on front and rear of all veh
as a safety feature. Others admiring the paint
from left: Don MacKenzie, transport and
equipment manager, James Blay, director of p
relations, and Henry Sissons, assistant ge
manager-services. A full report on progress
symbol program will appear in the next issu

# NORTH YORK ON THE MOVE

Take the total power demands of a city the size of Guelph; add them annually to a single utility system; and absorb with no sacrifice in standard of service.

This, in a nutshell, is the story of the phenomenal growth of North York Township Hydro-Electric Commission, which serves the second largest (in area and population) of the 13 municipalities comprising Metropolitan Toronto. In just 40 years. North York has developed from open rolling farmland to a built-up colossus of suburbs, industrial complexes and shopping centres.

The peak load on the North York system last year was 294,740 kilowatts — over 30 times greater than the 1944 peak. "In the years immediately ahead we can see no let-up in the community's rate of growth," declares D. K. (Don) White, North York Hydro's assistant general manager.

Little wonder then, that the utility's latest facility — a new ultra-modern head office building — is designed to take care of tomorrow as well as today. The third headquarters

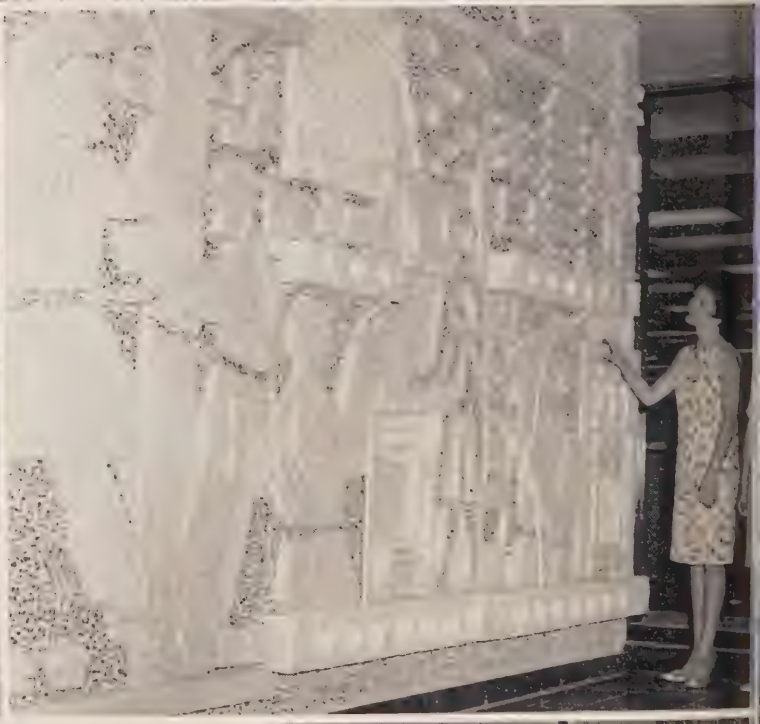
*North York Hydro Commissioners, from left: Reeve James Service, Dr. R. P. Johns (chairman) and Arthur Meen.*





*Section of the crowd at the opening of North York Hydro's new all-electric headquarters building. Visitors later toured the $1,100,000 structure.*





*Modern, free-standing stairway leads to the second floor of the building. A wall mural cast in concrete, depicting the various phases of Hydro service, is another feature in the lobby.*





*Fountain and raised walks add to the eye-appeal of the new building. North York Hydro's executive includes, from left: Don White, assistant manager; E. M. Campbell, secretary-treasurer; and James Gray, general manager.*

# uilt to take care of tomorrow, this new headquarters building flects growth pattern of a dynamic utility

ding occupied by the North York com-ion in its 41 years of existence, the 00,000 all-electric structure at 5800 ge Street, Willowdale, was officially ed in June.

armonizing with the two-storey concept Ontario's Hydro's Central Region head e located next door, the design of the building and its site permits expansion e rear as required.

he exterior of the new building is of grey rete, tastefully landscaped and with a tain playing in the foreground. Long nd low cost maintenance were influenc-factors in designing the lobby which is ly fashioned in metal trim with a pale marble wall and slate floor. A wall l cast in concrete with marble chips by nto artist Stephan Fritz depicts the vari-hases of Hydro service and end uses.

circular reception desk is located in the e of the lobby which also contains an for displaying electrical appliances, and dern free-standing stairway to the sec-loor. Stainless steel is used extensively ghout the building.

hong the outstanding features of the York Hydro building is its all-electric er conditioning system.

nter heating and summer cooling are led by an automatic, forced-air system distributes the air through two inde-ntly controlled systems. One distributes the perimeter of the building, dis-ng through registers at floor level, the second distributes air to the centre of the building discharging through diffusers.

heating system utilizes heat from the vel 347-volt fluorescent lighting, which lemented by 80 zone heat exchangers l in the ductwork. Hot water is sup-o the heat exchangers from four, 75-tt water heaters.

stance heaters are used only in the of outside doors. Sidewalks are kept f snow and ice by circulating electric-ated fluid (glycol mixture) through nbedded in the concrete.

r is subdued throughout the building. The most vibrant is a brilliant blue wall in the machine accounting department, which is designed to deaden the sound of the data processing machines. Approximately 60,000 billings are put through the department every month.

Color is more apparent in furnishings and rugs contained in the wood-panelled executive offices and board room.

Besides maintaining radio service with its line trucks from three strategically-located service centres, North York Hydro uses a second band to hasten calls coming into head office for hot water service. A staff of four girls with head phones type customer requests on special forms as they are received.

With more than 110,000 customers, North York has many accounts on its books of a kind to be envied by other utilities. Yorkdale Shopping Centre, for instance, the largest of its kind in Canada and one of the most extensive in the world, has an average monthly power consumption in the vicinity of 3,000,-000 kilowatt-hours. Its peak load occurs in the summer because of extensive air conditioning.

Commercial customers include the RCAF station at Downsview which uses approximately 1.6 million kilowatt-hours a month. DeHavilland aircraft's industrial load is in the vicinity of a million kilowatt-hours monthly. Industrial and commercial load represents approximately half of North York Hydro's $19,000,000 annual revenue.

Residential rates in North York at a monthly average of 1.18 cents a kilowatt-hour, are among the lowest in the province. Average consumption has risen from 58 kilowatts in 1925 to 178 in 1944 and 545 last year.

More than 45,000 homes in North York have flat rate electric water heaters — of which 20,000 are on rental. One major subdivision is electrically heated as are numerous individual homes, maisonettes and apartments.

Much of new line construction has been underground since 1960 and last year North York Council made underground services mandatory in all new residential developments. As well, the utility has a program underway to improve the appearance of older areas. Wooden poles have been replaced with concrete poles and spun secondaries on several streets.

Continued growth has its problems but as symbolized by North York Hydro's gleaming new headquarters, they are the kind most utilities would welcome. □

## RIBBON CUTTING CEREMONIES

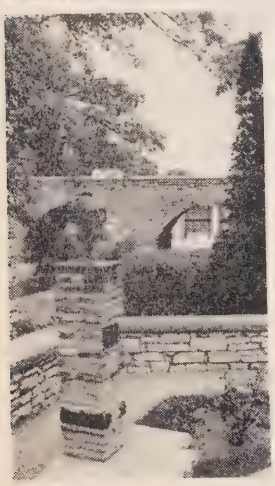
Growth has been the normal pattern in Ontario during the past 10 years, but in North York Township it has been nothing short of an explosion, W. Ross Strike, chairman of Ontario Hydro, told 160 guests at the opening of North York Hydro's new headquarters building.

Paying tribute to the management and staff of the utility for their "effective control of the explosion," he said that at no time had the township's growth exceeded the ability of the utility to cope with it. Since 1955, he pointed out, North York Hydro's capital assets increased from $10,500,000 to $34,-000,000.

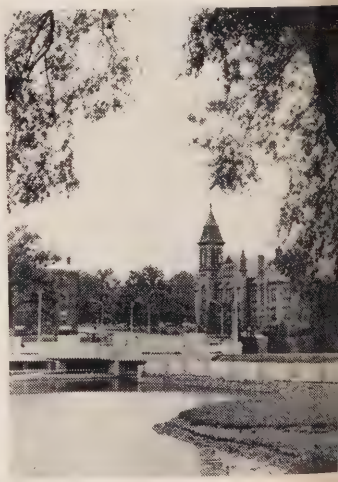
Mr. Strike congratulated Dr. R. P. Johns, chairman of North York Hydro, on completing 30 years service on the commission. Dr. Johns, who presided at the opening ceremony and snipped the traditional red ribbon with a pair of electric scissors, earlier gave a brief historic sketch of the utility.

A. K. Meen, vice-chairman of the North York commission, emphasized that the new headquarters had been built with no concern for the outcome of the Goldenberg Report (which proposes consolidation of Metropolitan Toronto's municipalities into four cities). Predicting that the township's 10 per cent annual growth rate would continue in the years ahead, he said the new building would be required regardless of any future consolidations. □









*Canada's Festival City reaches for the ultimate in blending the historic and picturesque with the needs of an expanding community. The quain*

# CULTURE & COMMERCE

by PAUL CHISHOLM

**More than 60 per cent of the city's pay envelopes are derived from industries established since Alec Guiness first pondered the slings and arrows of outrageous fortune on a Stratford stage.**

Shakespeare and sandwiches . . . Mozart an
. . . Bruebeck and a business appointmen
morning. It's up to the individual how cul
best enjoyed at the Stratford Festival —
types feel equally at home. Now in its 13th s
the Stratford Festival has become one of th
known community success stories in North A

Apart from its cultural benefits, the Festi
revitalized the city's economy to a level beyo
estimates of the most stalwart of local opt
Pride is something else which has grown up
this unique civic achievement.

Thousands of summer visitors pour into St
each year from points throughout North A
and overseas. This year, for the third suc









*rary are among the impressions taken away by thousands of visitors every year.*

PHOTOS BY HARRY WILSON

an, the box office gross is expected to exceed ,0,000.

w motels established in the city and on its irts have augmented the private accommoda- offered theatre-goers by Stratford's citizens. Festival's accommodation department alone s approximately 46,000 overnight guests season. Restaurants offering a variety of ational fare have sprung up to replace the n hall suppers which fed the influx of hungry s during the first two seasons.

new industry has been the greatest bonus. time of the Festival's first season, Stratford nown primarily as a furniture manufacturing ailway town. The impending closing of the huge CNR shops, largest employer at the time, was awaited with dread.

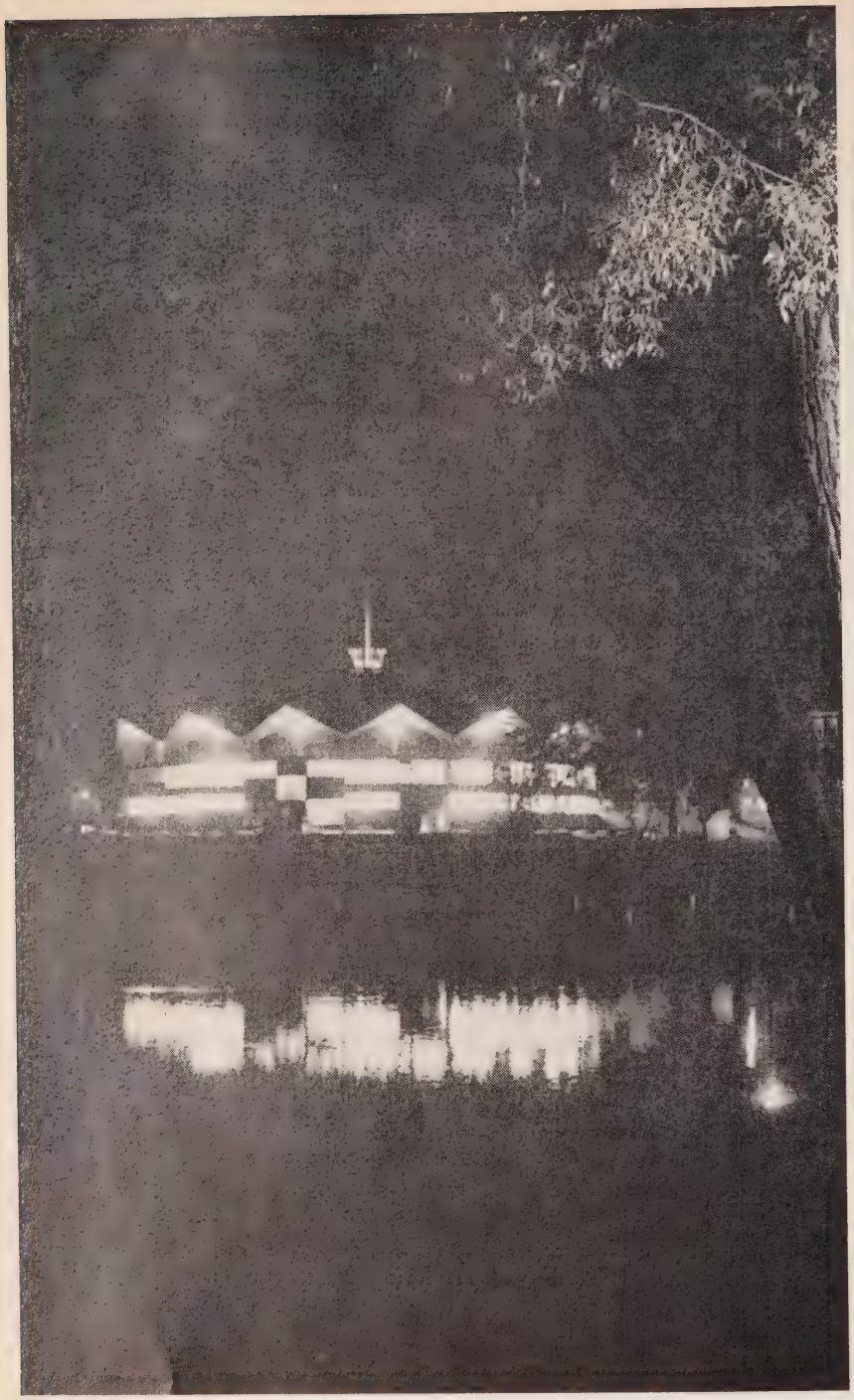
But the storm clouds soon dissipated. Since 1952, thirty-two new industries have located in the city. These, together with expansion of older firms, have created approximately 2,700 new jobs. It is estimated that 60 per cent of local wage-earners' pay comes from industries established in the last 10 years.

Says Frank Goddard, Stratford's Industrial Commissioner: "The Festival has been directly responsible for some of these new businesses. It has indirectly influenced others through the widespread publicity given the city, and the tens of thousands of visitors who come each season".

Stratford's proximity to large population centres — a crucial factor in the success of the Festival — undoubtedly has a bearing too on attracting industry. Products widely distributed from some of the city's 60 manufacturing plants include automobile components, toys, clothing, fabrics, machined goods and instruments, as well as furniture.

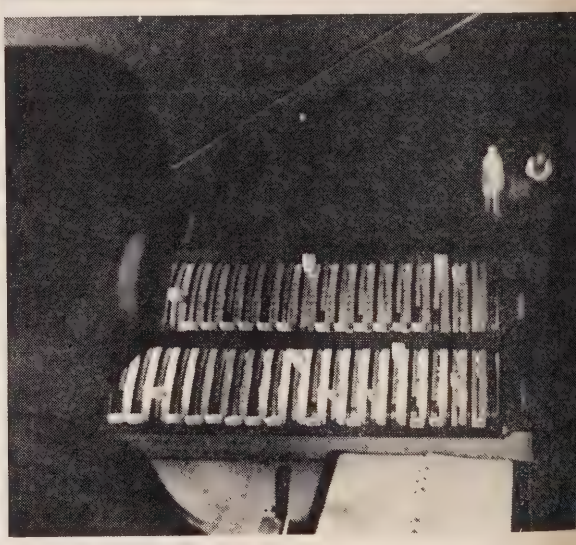
Actually, it is more than half a century ago that Stratford's citizens, perhaps unwittingly, set their quiet town on the road to fame. By a narrow margin they voted to bar railyards — and thus industry — from the banks of the Avon River. Priceless Riverside Park, covering over 130 acres, gives the Festival its unique setting.

New industry is sited in suburban industrial









*The Festival Theatre's strong floodlighting contrasts with subdued stage tones during a performance. To the Avon's wildlife, opening night (top) means that for the next 15 weeks the banks of the river must be shared with strolling visitors.*

parks where there is no clash with other development. The areas are well serviced and landscaped and buildings conform architecturally.

Culture and commerce, then, have combined to ensure Stratford a permanent place on the international map. But visitors also take away impressions of Stratford's quaintness and the fact that it is one of Canada's cleanest and best-lighted cities.

Much of the $3,000,000 left behind by visitors each year (exclusive of theatre admissions) is spent on Ontario Street, the main artery, where a sprucing up and tree-planting program is underway. Contrasting with Ontario Street's modern stores are picturesque boutiques, many of them specializing in Canadiana, which are located on side streets.

Last summer the Upper Thames Valley Conservation Authority gave the meandering Avon its first significant dredging in over half a century. This work included replacing the dam which backs up the lake behind the Festival Theatre.

Not the least of civic improvements underway is a program by Stratford Public Utility Commission — this year celebrating its 50th anniversary — to provide the city with street lighting second to none and, eventually, complete underground electrical service.

Residential sections now have modern, 200-watt luminairs mounted on every second pole, augmented in the park areas with post-top mercury-vapour lights.

The entire downtown and business sections have been relighted with a series of underground-serviced fluorescent lights. Fixtures are mou on tapered aluminium poles which correspon the overhead street signs for lane marking direction turning.

Underground wiring is mandatory for all subdivisions and advantage is taken of stree provement and new construction to get the underground in the business districts.

The PUC's role in helping make Stratford o the nation's most attractive cities hasn't cos taxpayer a thing.

"And there has been no rate increase i years," explains manager Douglas Seath. "U ground wiring and other assets are finance issuing debentures and from revenue from the of electricity."

Stratford's distribution system is designe keep pace with commercial and industrial e sion as well as population growth. A newly-







"duplicate feed system" is described by Mr. as "spokes of a wheel with the downtown tion as the hub."

igh-voltage loop around the city is carried foot poles. The loop serves four substations in turn, are linked with the main semi-round station built into the banks of the The station's grounds are completely land- in keeping with the surrounding area and of is utilized as a look-out point over the

tford, which generated its own electricity turn of the century, was one of the 14 municipalities to enter a contract with Hydro. First power was delivered on as Day, 1910.

915 the waterworks and electrical depart- ere amalgamated as the present commis- making this year the 50th anniversary. In 1926 the PUC took over the ailing gas company, which it operated for 27 years. The city-wide bus service, which moves the equivalent of the city's population every week, was taken over by the PUC in 1952.

Power consumption in Stratford shows a healthy 10 per cent annual increase, and rates are amongst the lowest in the province, states Mr. Seath. Electrical progress reflects the stimulus of the Festival. In the last decade peak power demand almost doubled while average residential use increased from 5,024 kilowatt-hours to 6,402 kilowatt-hours. During the same period average residential costs declined seven per cent.

As well as its reputation as an efficient, progressive operation, Stratford PUC is known as a good citizen. Be it providing free bus tours for visitors . . . working with other civic bodies to plan uptown re-modelling . . . or its active role in the city's industrial commission which it supports financially, the PUC maintains a policy of community service.

*The public counter in the office of Stratford PUC, which is this year celebrating its 50th anniversary. General Manager Douglas Seath says that the utility aims at eventually providing the city with complete underground service.*

"The community spirit in Stratford and the pride of its citizens are a tremendous advantage to the city," explains Mr. Seath. "We ourselves enjoy excellent relations with all the other civic bodies and they recognize us as a separate, municipally-owned, revenue-producing body."

The Festival City's official brochure describes Stratford as "the city where industry and the arts combine to provide a community unique on this continent." The role played by the PUC in achieving this is not insignificant. □



# bags and bags TOGETHERNES

**Among the largest users of cement in the province, Ontario Hydro continues in the forefront of concrete technology.**

Engineering masterpieces as ancient as Roman Forum and as modern as the m moth St. Lawrence generating station more than size in common. Cement, building material which has spanned centuries, is used in the construction of b

Versatile and durable, more concret thought to be used each year than all o building materials combined. And the b ing agent is portland cement — a typ cement just as "stainless" is a type of and "sterling" a type of silver.

Known technically as a hydraulic cer because it is capable of hardening u water, portland cement is produced in major countries under innumerable b names. It is the best answer man has able to find in his quest for a material to stones into a solid, formed mass — a c which dates back at least to the eras of Assyrians and Babylonians, who used for the purpose.

Sophistications have been added thr the ages. By mixing slaked lime with po lana, a volcanic ash from Mount Vesu the Romans produced the first hydrauli ment.

Natural cement, produced by burni mixture of lime and clay, was used b and after the advent of portland cemen its properties varied widely.

Joseph Aspdin, an English bricklayer, out a patent on a hydraulic cement in He called it portland cement because





resembled the stone quarried on the
f Portland off the British coast.
pdin's method involved the careful pro-
ning of limestone and clay, pulverizing
and burning the mixture into clinker,
was then ground into finished cement.
nd cement today, as in Aspdin's day,
redetermined and carefully proportion-
emical combination of the oxides of
m, silicon, iron and aluminum.
ural cement was first produced in
la between 1830 and 1840 by Ruggles
t at Hull, Quebec. He used limestone
the banks of the Ottawa River. This
ny later marketed the first Canadian-
ed portland cement.
ario Hydro is amongst the largest
users of cement in the province,
approximately two per cent of the
000,000 bags used annually. During
uilding periods, when such mighty
s as the Niagara and St. Lawrence
ting stations were under construction,
used as much as one million tons of
te annually.
such a huge annual investment it
ly good business to stay ahead of
ments and down through the years
has been to the forefront in concrete
ogy. Laboratories to test cement and
e and to develop improved methods
nongst the earliest research facilities
hed by the Commission.
o has been particularly successful in developing methods of working with concrete during severe winter conditions. These techniques enabled the Commission to meet critical target dates on projects which were vital to a sufficient supply of power.

By using various admixtures and aggregates in concrete and adopting the latest in construction techniques, Hydro has reduced the use of cement on many projects while at the same time maintaining and even improving structural strength and durability. Up to 30 per cent less cement is being used on some concrete construction jobs today, compared with 15 years ago.

"The practice of using large aggregate and less cement in structural concrete has gradually evolved from mass concreting techniques," according to J. N. Mustard, Hydro's supervising engineer of masonry research. "It has meant re-vamping of concrete specifications by the design and research groups, and has required co-operation from the construction and inspection forces. Handling and placing equipment have been improved too. Air-entraining agents, water-reducing agents and cement replacements have all contributed to the use of less cement."

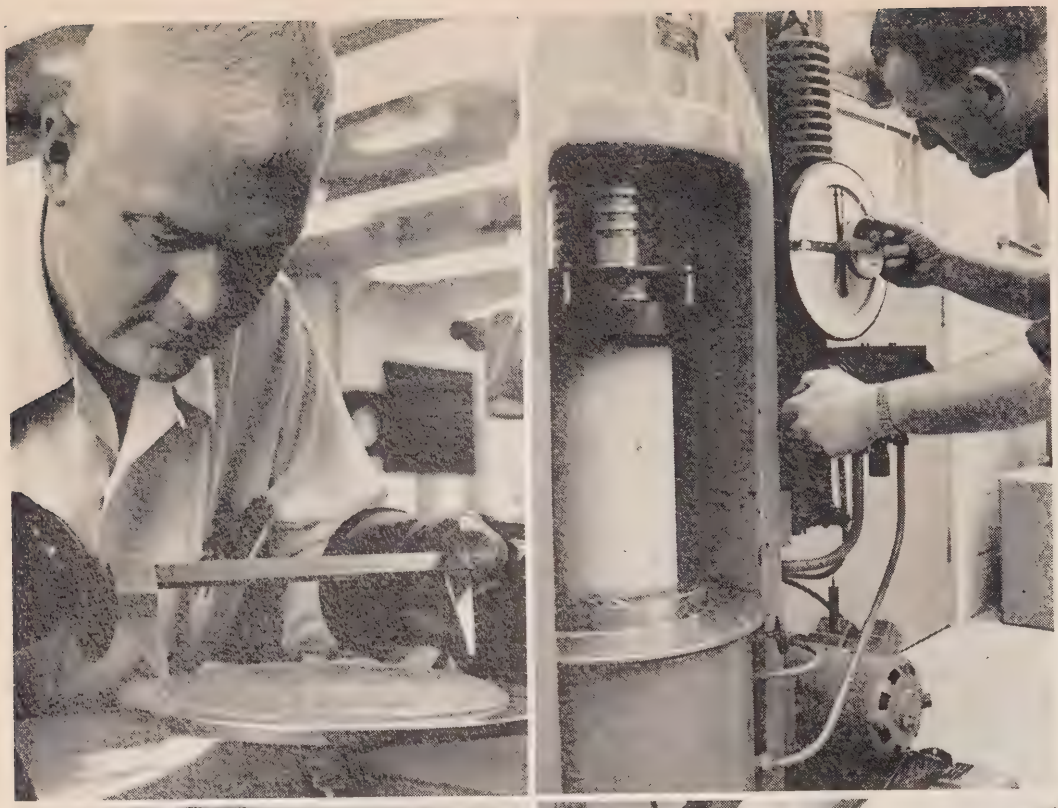
Air-entrained concrete contains billions of microscopic air cells per cubic foot. These relieve internal pressure on the concrete from the expansion of water when it freezes.

An important aid in Hydro's concrete research program is the Soniscope, an instrument originally designed for detecting cracks in mass concrete. Developed by Jack Leslie of the Electrical Research Department, and since patented, it is now used for a wide range of concrete research and testing in such countries as Italy, Japan and the United States.

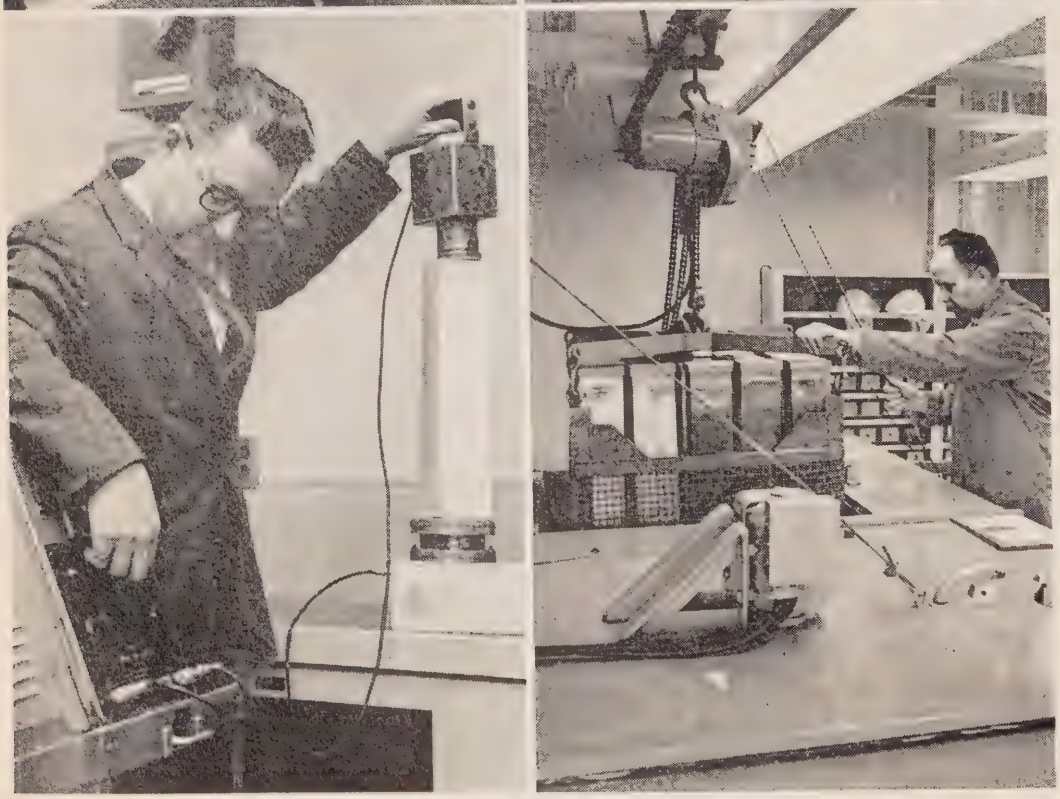
The Soniscope gives off a series of vibrations and records concrete quality in graphic form. It also detects and evaluates concrete deterioration both in the laboratory and in the field.

A freezing-thawing chamber is another facility aiding Hydro's researchers. Concrete samples placed in the unit are subjected to air or water freezing conditions. In the chamber, the samples can be subjected to more than 300 weather cycles, the equivalent of many years of normal field exposure. Concrete samples are also subjected to "exposure tests" on a huge outdoor plot at the laboratory. For compression tests in the laboratory, concrete samples are placed in a testing machine capable of pressures up to 400,000 pounds.

Other durability projects at the laboratory include work on wetting and drying effects, studies of the effects of various elements in water on concrete, and determination of the air content of hardened concrete. Fly ash – a bothersome waste product from the combustion of coal at thermal-electric stations — is finding use as a partial cement



*Hydro research technicians Ev Mosher (left) puts mortar samples through flow tests, while Doug Wilkinson subjec a concrete sample to the forces of a compression testing machine.*



*Jack Leslie, electronics supervisory engineer, with Soniscope unit which he invented. Right: technician Rudy Klein removes concrete samples from freez thaw testing chamber.*

replacement in concrete as a result of work by the research team.

Another important aspect of the laboratory's work is checking each ingredient used in concrete slated for use on a major project. This work includes ensuring that cement meets the specifications laid down by the Canadian Standards Association.

Comparative tests on cements from various Canadian mills guide Hydro's field engineers when it is necessary to substitute one cement for another on short notice. All sand and stone used in Hydro concrete has to pass exacting tests for soundness and durability.

Concrete, like good wine, seems to improve with age — up to a point. Samples are taken regularly from Hydro's major dams and other structures to check deterioration and schedule repairs.

Concrete from some of the older generating stations has been found to be as much as three times stronger than its original specifications and this will be true 50 years from now of the concrete in current construction projects.

Being an organization that designs, b and operates its own plants, Hydro h special interest in concrete as a struc material. And over the years it has tablished an international reputation a authority in the specialized field of crete associated with the production distribution of power. Continued rese has helped Hydro get the most fo concrete dollars.

a progress report

# THE BEETLE BATTLE

by LOIS LANE

**The law has joined the scientist and forester in the fight against Dutch elm disease.**



*Visual gauge aids operator to measure tree. Size is an important factor in determining the chemical dosage to be injected.*

e isn't everything as Goliath found out, but he d David were evenly matched in comparison with e opponents in the present struggle which is vastating large sections of our landscape. In ch encounter, the tiny bark beetle wins out over towering elm tree.

The scourge is actually a fungus whose spores carried from tree to tree by the beetle. As it ds on the bark, the spores are introduced into tree's vascular system where they soon block the supply of water and food.

ntroduced into Canada about 20 years ago, m Europe via the United States, Dutch elm ease has since infected trees across vast areas Ontario and presently extends in the province n Windsor to the Quebec border and as far th as Mattawa-North Bay. It has not yet been nd farther northwest than Sturgeon Falls but re is no reason to believe that its present ts will not be extended.

nce contracted, the disease is fatal, but much eing done to minimize damage and important developments offer great promise for improved trol.

ccording to Professor Erik Jorgensen, who ds the Shade Tree Research Laboratory at the ersity of Toronto, a well-organized control ram can be expected to reduce the annual loss lm trees below one per cent of the remaining thy trees. Annual losses might otherwise run igh as 60 per cent or more in a given area.

emoval is still the only practical control mea- after the disease has struck.

ntario Hydro Chief Forester Jack Winter points hat foresters either pruned or removed nearly 00 elms on Hydro property last year.

ealthy trees may be protected from the disease praying with a DDT emulsion during the tree's ant season. The spray leaves a lethal residue ne bark's surface which kills the adult beetles e the fungus they carry can contact the sap m.

ey know this works at Hydro. Stately elms d the Head Office building bear leafy evidence. hese trees were originally sprayed 10 years nd the program has been maintained every spring," says Mr. Winter, who points out that most other elms in the area, and even adjacent trees, have fallen victim to the disease and, consequently, to the axe.

Another important weapon was added to the limited control arsenal this spring with the introduction of Bidrin — a chemical heralded by authorities as a major breakthrough in the fight against the elm bark beetle.

Bidrin, an organic phosphate, was developed by Shell Oil Company. Dr. Dale Norris of the Entomology Department, University of Wisconsin, and Dr. Hugh Thompson, Kansas State University experimented with its use against elm bark beetles. Injected into a tree, Bidrin gives temporary protection against bark beetle feeding similar to that obtained with over-all sprays. The new chemical is so highly toxic that its use is controlled by Shell, who certify those who will use it.

"We had 122 persons from across the province (including Ontario Hydro) attending our first training course this spring," says L. A. Miller, manager of Shell's agricultural chemical section. "Here, foresters, arborists and tree company employees learned how to inject a tree properly. This is important, for an underdose is ineffective and an overdose will harm the tree."

Dr. Jorgensen of the Shade Tree Research Laboratory, which is co-operating with Shell in the Canadian experimental application this year, is an enthusiastic proponent of Bidrin. "Its advantages are many", he says.

"First of all, there is no contamination of the soil and little chance of bird poisoning. The chemical is absorbed into the tree itself and by fall there is no trace of the poison left."

He also points out that there is no expensive equipment to buy for the application and the chemical can be injected any time, under any weather conditions.

Dr. Jorgensen, whose laboratory had been experimenting with Bidrin for two years before it became available to the Canadian market, reports most encouraging results. "We have been experiencing almost 100 per cent protection with this chemical," he says.

The tree must be treated each year within three weeks after the leaf buds break. Each treatment costs between $10 and $20 depending on the size of the tree, but this must be measured against the cost of tree removal — upwards of $200 for large trees in urban areas.

While Bidrin might be part of the answer for the man with two or three trees on his property, it is obviously impractical for bushlots and large rural tracts so that the ultimate answer to the Dutch elm disease problem lies outside the scope of spraying or individual innoculation. This is where the biologist and the botonist come in.

At the federal biological control centre at Belleville, scientists have been investigating parasites as a means of controlling the disease. This involves identifying the natural enemies of the bark beetle in Europe and endeavouring to establish them in the infected areas here.

While results so far have been inconclusive, the Canadian group is presently investigating a species of round worm and is co-operating with U.S.





authorities with high hopes for an eventual breakthrough.

Another biological approach is sterilization. Kenneth Stewart of the Shade Tree Research Laboratory has been experimenting with chemical sterilization of bark beetles for a year and reports some progress.

A chemical called Metepa affects the insects ability to reproduce and by spreading it on elm logs and twigs it can be infused into the body of the young emerging beetle or ingested when feeding. Mr. Stewart says it is far too early to determine how effective this program will be but field tests being conducted this summer should provide a clue.

Sterilization has proved enormously effective in a few cases of insect control but whether or not it can be used successfully depends largely on the mating habits of the insect concerned.

Some forest geneticists have been taking yet another tack — trying to develop a hybrid elm with a high resistance to disease. A search for resistance in 200,000 elm seedlings failed to produce one hardy type but two lonely seedlings are being carefully nurtured by forest pathologists in the Forestry Department of the federal government in Quebec City. These emerged from seeds exposed to radiation and scientists feel they may be more resistant than run-of-the-mill elms.

Promising over the long term, perhaps, but it will be years before resistance can be determined and even longer before new strains could be distributed on a large scale.

Meanwhile, it's up to the boys on the firing line to keep the plague under control with the admittedly crude measures at their disposal while the more sophisticated approaches are developed.

And there has been one encouraging development on the legal front. Private property has always posed a problem to control authorities since they were powerless to operate on land outside their jurisdiction. A recent amendment to the Plant Disease Act should widen their effectiveness.

The change enables the municipalities, at their own expense, to enter private property to carry out control measures over Dutch elm disease.

Owen Sound was the first corporation to pass a by-law, based on the amendment, and control authorities hope it will serve as a model for other centres. The Owen Sound by-law reads in part:

"The city or its agent will have powers to enter upon private lands for the sole purpose of cutting and rendering harmless all diseased, dead or dying elms that may infect adjacent healthy elms, at the expense of the Corporation."

When a municipality passes such legislation, it can then apply for financial assistance under the Winter Works Incentive Program.

Contrary to general belief, our elm trees will never be wiped out even if the present scourge were allowed to sweep unchecked across the province. Because the bark beetle is the only carrier, and because it depends on the elm exclusively for food and breeding purposes, it would become ever easier to control as the trees grew scarce.

But the price of inaction would be far too high.

Tree removal costs, real estate losses and wood lot decimation would add up to a staggering total. And the aesthetic assets inherent in our tree-shaded streets and parks and quiet countryside are enough in themselves to warrant an all-out effort in defense of our elms. □

# new look on the trent

by NICK NICKEL

**Champlain would never recognize the place**

*New lock, left, on Severn. Electricity will take over swing bridge operation.*



adition bowed to progress this year on the ent. For more than half a century the un-icial opening of the popular waterway sys-n linking Lakes Ontario and Huron across uthern Ontario had been signalled, May by the lockmaster at Peterborough. The nple ritual involved breaking out a new g from the central tower of the lift lock.

It was forgotten in 1965 in the flurry of dernization. And no wonder.

The renowned lift lock at Peterborough s being switched over from hydraulic to ctronic control and eight new five-ton alu-num gates hung and fitted. Engineering provements were being made to the mech-sm of the smaller lift lock at Kirkfield. d a brand-new lock on the Severn was ng put through its paces — replacing one wo marine railways at this location.

These and many other major changes by Federal Department of Transport herald a multi-million dollar face-lifting on one of the world's greatest controlled fresh-water systems. The Trent-Severn's 45 locks and 33 miles of canals connect a 240-mile chain of lakes and rivers from Trenton in the East to Port Severn on Georgian Bay. A 35-mile off-shoot links Port Perry and Lindsay with the main stream.

Launched in 1962, the new look includes:

- Ten locks converted from manual to electric operation with others to be modified.
- Eight high level bridges built — others planned.
- New navigation aids including standardized lighting markers. Metal can buoys replacing cedar spars.
- Streamlined traffic control procedures.
- New uniforms for lockmasters and canal men — dark green with yellow shoulder patches and white yachting caps.
- Conversion of dwellings built for personnel accommodation to public washrooms.

All this is to accommodate small boat travellers estimated at 60,000 last year — a flotilla which is growing at the rate of 10,000 annually.

Besides its pleasure value, the Trent-Severn system is a source of power which loomed large in the early development of the province but looks relatively insignificant in the light of modern projects. It was at Big Chute on the Severn that Ontario Hydro purchased its first plant, in 1914.

This is also the site of a heated controversy presently raging over whether or not a lock should be built to replace the marine railway presently used to haul boats over the hump at Big Chute. Admittedly a bottleneck, the railway owes its survival to the lampreys.

Opposition to a lock at this location is based on the argument that it would allow the lampreys entry into Lakes Simcoe and

*'s largest lift lock, at Peterborough, has been electrified in million dollar face lifting. Lock raises or lowers boats 65 feet.*



Couchiching with disastrous results on the fishing. Among plans being considered is a lamprey-proof lock incorporating a hot water basin — the economics of which have not been determined.

In all, Hydro has acquired eight small plants on the Trent system from private companies and has built three of its own. They produce a total of 45,500 kilowatts — about one-seventh the output of a single unit at the Lakeview thermal-electric plant.

Greater by far than its power role is the Trent's attraction as a summer playground. The shores of lakes and rivers of the system are all but ringed with cottages. Resorts, motels, boatels and marinas abound and much of the local economy is linked with the tourist dollar. Private enterprise has launched a spending spree estimated at $50 million to accommodate expanding tourism.

The region encompasses a spectrum of scenery ranging from the great cultivated trench of the Trent River Valley to the semi-wilderness of the Precambrian Shield. In the lower section lies the 25-mile expanse of Rice Lake while the upper network includes the broad inland sea of Lake Simcoe.

Sports fish are plentiful and the hunting is great for those seeking clues to a colorful past.

Only last year the skull of a grizzly was unearthed near Orillia. Mamologists proved that the animal lived beside the shores of preglacial Lake Algonquin 11,700 years ago. Man came much later.

The Point Peninsula Mound Builders arrived at Rice Lake some 2,000 years ago, lived there for a century and built sacrificial and burial mounds that may still be studied.

The prehistoric people of Huronia in the western section of the region acquainted explorer Samuel de Champlain and nine French soldiers with the complete waterway in 1615. Accompanied by 500 warriors into the hear of upstate New York, Champlain and hi group withdrew after abortive raids to be come the first white traveller of the Tren system. The 350th anniversary of that occa sion has slipped by unnoticed.

A retaliatory raid by the enraged Iroquoi made a No-Man's land of Huronia until th northern Ojibwas pre-empted it. Their an cestors live along the route today on fou reserves.

The Trent Canal was conceived originall as a military highway — an escape hatch i the event that the Americans gained suprem acy of the lower Great Lakes following th War of 1812-14.

In his Defense of Canada report of 181 the Duke of Wellington recommended tha the canal system be built and that: "yo should remove the capital of the provinc

*Pleasure boat flotilla is released from lock at Lake Couchiching. Some 60,000 craft plied system last year.*



om York to Kingston, or if that town is too
r removed from the centre of the province,
vould fix the capital up the Trent River."
General construction on the Trent was
rted in 1837 and halted four years later at
e union of Upper and Lower Canada —
e threat of American invasion having
eatly diminished. Work on the system
ght never have been resumed had not
onization, lumbering and political groups
bied for the work to continue. Finishing
ches were completed between 1906 and
18.

It requires 150 people on a full-time basis
maintain and supervise the Trent system's
dges, buoys, lighthouses, floating and sta-
nary wharves, locks, control dams, barges
weed-cutting machines. Also involved is
careful regulation of water levels of the
es and reservoirs in the 7,600-square-mile
inage area.

Attracting more and more attention from afar as its virtues become known, the Trent system and the City of Peterborough continue to be identified with the lift lock. Built 61 years ago, the world's largest lift lock is still the centre of tourist curiosity and city officials present visiting dignitaries with lapel pin replicas.

Designed to overcome four rapids on the nearby Otonabee River, the lock raises and lowers boats 65 feet in six minutes. This engineering marvel consists of three concrete towers supporting two water-filled chambers balanced on plungers that work like pistons in deep presswells — on the same principle as a car greasing rack.

When one chamber is in the up position, with its gate opening into the upper reach of the canal, the other is down — opening into the lower reach. By releasing a 100 tons of water through a crossover valve system, one chamber is forced down while the other rises.

In the recent renovations, the control system has been changed over from manual to electric, an employee elevator is electrically operated and electric heating has been installed — all controlled from a console in the new control tower. Less known is the lift lock at Kirkfield which operates on the same principle, raising boats 49 feet.

All power boats are accommodated without charge in all the locks of the Trent system but freshwater sailors should keep one point in mind before weighing anchor. All motor driven vessels are required to be licensed this year under the Canada Shipping Act if they intend to sail the Trent, Rideau or Quebec canals. This too, is free and a small inconvenience weighed against the delights in store for modern day explorers on the Trent. □

*ne railroad still hauls boats over the hump at Big Chute — Hydro's first generating station – purchased in 1914.*







*idge on the Severn. Eight high level bridges have been built and others are planned to permit navigation without interruption to road traffic.*

# MEETING OF MANAGEMENT

*Queen's University was an appropriate site for this two-day AMEU conference where delegates studied subjects ranging from decision making to higher voltage distribution.*

The dormitories were full and the quiet dining halls came back to life as the summer serenity of Queen's University campus was interrupted briefly in June. Breaking the tranquility were some 300 post graduate students in the engineering and management of the municipal Hydro utilities of the province.

They came from as far as Fort Frances and they represented utilities as large as Toronto, as small as Atikokan and as new as Nepean. It was the 17th annual AMEU summer conference for management and the participants left the Kingston lecture halls with valuable new insight into the technical and administrative side of utility operations.

**A Call for Unity**

A strong plea to discard the parochial in favor of the "family" concept of Hydro in the province was the keynote of the opening addres by Stanley Webster, Tillsonburg, president of the AMEU.

"I urge every delegate to realize that this is the time to look at Hydro as a province-wide family", he said, "and not as a group of single, autonomous utilties."

Mr. Webster stressed the need for continued progress towards uniform procedures and equipment standards. He said the importance c uniformity would become more and more evide as the trend toward municipal amalgamation continued.



*Queen's University buildings at Kingston were specially floodlit for the occasion of the 17th annual summer conference of the Association of Municipal Electrical Utilities. Checking out the temporarily-placed fixtures are, from left: Art Taber, Fort William, R. S. (Smokey) Reynolds, Chatham; and Don White, North York.*



*Symbolizing its 50-year history, the Electrica Utilities Safety Association erected a dummy lineman as he might have looked in 1915. The fully-equipped lineman of today was featured in another display.*

**ght talk from the president**

rating the Hydro family theme, OMEA
dent Dr. R. H. Hay brought delegates to the
of their seats in a soul-searching address
alculated to end any complacency.
is Hydro family of ours is unique and we
a tendency to assume that it's best", he said.
uld point out that two Canadian provinces
ecently established province-wide hydro
ns and that the municipally owned
pt of distribution is not in their pattern.
ave looked at us," Dr. Hay continued,
lecided that they do not want to follow.
at they have done", he said, "eliminates
al political hazard and they think this
ghs our hole-card—direct municipal
pation.
ubmit, that in the long run, the job we are
s done far better, in my opinion, than it
e done in any other way," Dr. Hay said. But
ned that the ability to survive in the
t competitive environment would depend
daptability.
g back to the family analogy, Dr. Hay said
nkness, honesty and fair play were
ntial for a successful family relationship.
he youngest deserves to be heard," he
nd I also think we need a little more
n our relations — one with another."

**Symbol of unity**

Delegates to the summer conference were among the first to preview the dynamic new Hydro symbol which is destined to grow more and more familiar as the visual identity program gains momentum.

"I'd like Hydro to mean the same thing across the province", explained Ontario Hydro Chairman W. Ross Strike in preliminary remarks preceding the unveiling, "and I think the symbol can help us towards this goal if we all get behind it."

In explaining the philosophy and mechanics of Hydro's "new look", James A. Blay, director of public relations, said that a carefully planned identity program "could project a personality and a character which works silently and effectively to support a corporation's every activity."

A haphazard program, he warned, actually worked against an organization — disparate elements coming together to leave a confused, blurred and even incorrect impression. Without making all visual communication look alike, he said, they could be made to conform to a basic identity scheme serving to represent the more fundamental and enduring characteristics of an organization — "those things about it which do not change with shifting times and markets."

He stressed that trademarks and symbols served best when widely used and he mentioned stationery, all official printed matter, general advertising, trucks, signs and buildings as the more obvious symbol media.

Mr. Blay told delegates that the Public Relations Division would be glad to advise and assist utilities with any problems that might arise in connection with the application of the new symbol.

**Avoid the small town complex**

Meat of the meeting for management was to be found in a series of informal panel discussions where audience participation was invited. Concurrent sessions enabled delegates to choose subjects to suit their own particular interests. Load building was among the non technical sessions.

Defining a smaller utility as one with less than $500,000 annual revenue, panelist H. J. Murphy, Barrie, told the load building session that there were approximately 300 in this category in Ontario. Collectively, he said, these were a sleeping giant and any not sold on promotion would do well to ask themselves these questions:

- Do you want your utility to grow?
- Do you want to keep rates low?
- Do you want the best loads?



*iose attending the conference, were from left: Charlie Phelps, Sarnia; Ray Coles, Bill Moulton, Nepean Township; Moe Sheppard, Electrical Utilities Safety on; Dave Pope, Sandwich West Township; R. E. Helmer, Guelph; L. G. Algar, William Best and Morley Watson, Sandwich West Township; Jack Anderson, on; and John Murphy, Barrie.*



*Ontario Hydro Chairman W. Ross Strike, left, and AMEU president Stanley Webster, Tillsonburg, examine application of Hydro's new symbol during special presentation to delegates. Mr. Strike called for one Hydro family across the province.*

- Do you want to improve your community (new industries)?
- Do you want to enhance your public image?

"If the answer is yes", he said, "then you agree that selling is an investment in the future — another dimension in engineering".

Urging his audience to avoid "the small town complex", panelist Murphy said that a community was only as small as its outlook. "Enlist the aid of your allies", he suggested, as the first step in organizing an active load building program.

"Start with your commissioners, he said, and then line up your staff. Properly motivated, they can be of enormous assistance. Electrical contractors and dealers were other allies whose aid, he said, should be solicited.

"Some utilities are going to need help", he warned. "If they can't do it themselves, it will have to be done for them. I can see no reason why a sales service as good as the technical assistance now available cannot be provided". For those who could not handle their own "show", he suggested a marketing office with trained personnel and a mobile sales force which could move in as required.

Mr. Murphy also noted that the AMEU load promotion committee was prepared to assist the smaller utilities with their problems in the load building field. "Ways must be found", he concluded, "to rouse the sleeping giant against the flaming dragon."

**Water heater togetherness**

Standardization of water heater promotion was the subject discussed by panel moderator Gordon Stacey of Guelph. In reporting progress of an AMEU sub-committee appointed to recommend a uniform approach, he listed five areas where standardization would be required before province-wide water heater advertising could achieve maximum effectiveness. These were: installed price, service policy, operating costs, rental charges and financing.

He warned that some of the sub committee's recommendations would differ from the present practices of various utilities.

"The individual utility will be free to develop its own program", he said, "but it will be strongly advised to attempt to do so within the ranges suggested in these recommendations for the overall benefit of Hydro in Ontario."

Mr. Stacey listed the following as questions still to be resolved: Should water heater services be shown separately on bills? Should service be discontinued, on request, for customers going on vacation? What are the effects and desirability of off-peak controls? And should trade-ins be considered?

**Radical new approach**

"Why is it that the electrical system in a house is virtually the same as 30 years ago while most other aspects of electrical energy production, transmission and distribution have changed radically?"

This was the question posed by Gordon McHenry, manager of Western Region, in a talk urging a complete reassessment of home wiring methods. He told delegates that the radial circuit concept of house wiring presently in use had been originally designed with lighting only in mind. It was not satisfactory, he maintained, for the supply of energy to receptacles from which the growing number of portable appliances are operated.

Mr. McHenry described in detail a system already in use in Britain which, he said, was well worth considering. Known as the "loop" or "ring main" system, he said it permitted many more receptacles to be connected and took much better advantage of diversity.

As an interim measure, he suggested the use of 230-volt, three-wire circuits with overcurrent protection at the outlet receptacle

Calling for an industry-wide co-operative effo the development of new wiring concepts, Mr. McHenry put the onus on the utilities to initiate the move.

"To motivate such a development", he concluded, "the interest and support of some forceful body is required. Could this body be the AMEU?" □



*Lighting equipment was left in place at the conclusion of the conference for display purposes. Kingston PUC and Ontario Hydro conducted tours for civic officials, area businessmen and the public.*



*Delegates paid rapt attention during panel discussions at the confere R. M. Senyshen, Kitchener PUC's chief engineer, standing, was assi. above presentation by E. W. Dunlap, left, of Guelph, Don White, North York, and Ross Lamb, Toronto Township.*

## FICE METHODS CONFERENCE

atest trends in office equipment and
edures, and improved methods of
nistration, came under the scrutiny of more
100 utility personnel at a two-day
erence in Belleville in June. Sponsored by
ssociation of Municipal Electrical Utilities,
4th annual accounting and office
nistration conference (Eastern) attracted
gates and their wives from as far afield as
Frances, Sault Ste. Marie and Cornwall.
eas were also exchanged on such diverse
s as power costing, workmen's compensation
abor relations.
in Shaw, Toronto, an official of the
men's Compensation Board, outlined
dures in the board's operation and
asized to the utility men the importance of
reports concerning accidents. He said that
reported as work injuries last year
sed to a total of 318,331, compared to
27 in 1963.
Shaw predicted that more professional
rs, including engineers, would eventually
under the jurisdiction of the Workmen's
ensation Board.
ly discussion took place on labor disputes
ntract negotiations during a presentation
ith Scott of Ontario Hydro's Labor Relations
n. Mr. Scott said that in resolving
cks it was important "to put ourselves
other fellow's place during negotiations.
n't overlook the excluded middle," he
ed. "The middle course does not
mean compromise."
utlining his theory of "Penny Power,"
Hyde, general manager of Toronto Hydro,
ed that rates were the key to good
relations when they were simple and easily
tood by the public. "When discussing
ith your customers it is vital not to make
eel angry, ignorant or confused," he said.
ng a luncheon ceremony scrolls were
ed to 14 past chairmen of the conference. □

## DISTRICT 5 MEETS IN PORT DOVER

Lawyers and image makers shared the spotlight at the District 5 OMEA summer meeting in Port Dover as some of the legislation governing Hydro operations was examined and the district enjoyed a preview of Hydro's "new look."

"There is a feeling that many of us do not have sufficient knowledge of the two acts under which we operate", explained Andrew Frame of Burlington, "and we are fortunate in having two people of such ability to address us." He was referring to guest speakers Miss Mary West of Ontario Hydro's Legal Division, and Kenneth Calder, Q.C., a London PUC commissioner.

Miss West briefly sketched the development of municipal government in Ontario including the Public Utilities Act which she described as "permissive" in context. She reviewed sections of the Act having to do with the public utilities commission and municipal councils — their rights and powers with regard to one another.

Noting that utilities were required to carry insurance against liability arising out of negligence on the part of their employees, she said that the courts tended to demand a high standard of care on the part of the utilities in the conduct of their work.

With 14 years experience as a commissioner, a past president of District 7 OMEA and a former member of the provincial legislature, Mr. Calder's talk, "The Public Utilities Act in Action," was both interesting and helpful.

Mr. Calder advised delegates to look on the law as they would a line truck or aerial bucket — an instrument which could be used to the advantage of a utility providing its use was entrusted to an expert. Arm yourselves with the best available legal help in your neighborhood, he said, and don't hesitate to consult Ontario Hydro's legal section when you get stuck.

As Hydro commissioners, Mr. Calder urged his audience to think as public officers — not as lawyers.

"Above all", he cautioned, "don't underestimate the competition and don't think you can legislate it out of existence. It's your business to look ahead. Let's not be carried kicking and screaming into the 21st century — let them say, rather: those electrical wizards are ahead of us again."

Speaking to the meeting prior to the presentation of the new symbol, Ontario Hydro chairman W. Ross Strike reiterated his call for closer family ties in the interest of efficiency and to better meet competition. He called acceptance of the new visual identity program a first step in this "solidarity concept."

In presenting the symbol for the first time before an OMEA District meeting, James A. Blay, Ontario Hydro's director of public relations, emphasized that acceptance of the symbol program by the municipal utilities was entirely voluntary.

"I do not want to leave the impression that we are asking you to throw out 10,000 billing forms or to take your trucks off the road in order to implement the new symbol", he said. "When ordering new stationery — or your trucks are in for repainting — then we ask you to consider adopting the new look."

It was brought out during discussions that District 5 was the appropriate District to preview the symbol since the OMEA resolution which started the ball rolling had originated there. □



*elected at the 14th annual Accounting and Office tration Conference sponsored by the Association cipal Electrical Utilities (Eastern Division), from A. M. Moore, Oshawa, past chairman; Don Best, ough, director; Jim Fooks, Kingston, program n; Ray Wright, Ottawa, chairman; John ale, Oshawa, secretary-treasurer; and T. W. arrie, director.*



*Miss Mary West, second from left, of Ontario Hydro's Legal Division was one of the guest speakers at the summer meeting of District 5, OMEA, at Port Dover. Members of the Port Dover PUC, which hosted the meeting are, from left: A. D. Simpson, manager; Mrs. M. Stewart, secretary, and Mayor H. J. Schneider.*




*AMEU president Stanley Webster of Tillsonburg, left, explains Hydro's new symbol to Dundas delegates at the conference. From left: Dr. J. D. Fleming; Mayor L. B. Couldrey; M. T. Jaggard and W. Newitt.*

# ALONG HYDRO LINES

## Metro Changes Recommended

The long-awaited Goldenberg Report on Metropolitan Toronto, which recommends consolidation of the present 13 municipalities into four cities, makes no mention of Hydro administration.

This has been interpreted to mean that Hydro would be administered individually by the four cities — Toronto, North York, Scarborough and Etobicoke — should the report be adopted by the Ontario Government. Eleven Hydro commissions or systems presently provide electricity in Metropolitan Toronto.

Premier Robarts states that the Department of Municipal Affairs will oversee and guide the government examination of the Goldenberg Report, and that this may take several months. He made it plain that while the government may consult the municipalities about implementing the report, there would be no further public hearings. □

## J. A. Williamson Honored by AMEU

Sincerity and devotion were the words heard most often in referring to the guest of honour at a recent testimonial dinner held in Niagara Falls. He was J. A. (Red) Williamson, manager of Niagara Falls Hydro, and he was joining the selected ranks of those who have received the president's citation and honorary membership in the Association of Municipal Electrical Utilities of Ontario.

Past presidents from across the province were in attendance as Mr. Williamson was handed the citation. It read:

"As an outstanding engineer, his time, talents and skill have been devoted to improving electrical distribution and allied functions.

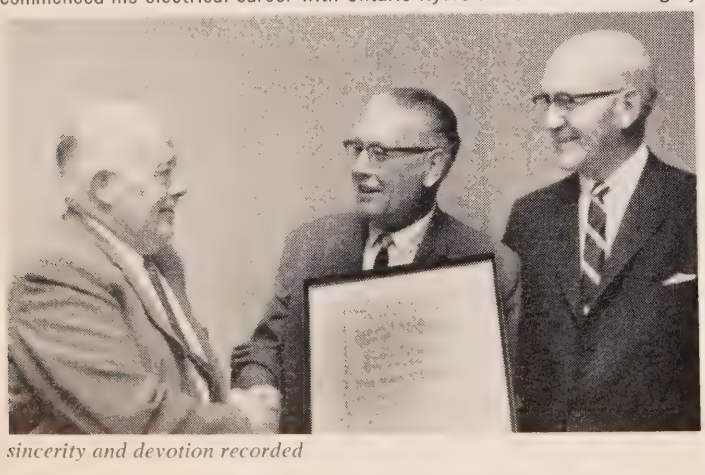
"We are proud that he served as our president (1958) and recognize that many of the administrative recommendations he has made resulted in great benefit to The Hydro-Electric Power Commission of Ontario, our association and the citizens of Canada."

In making the presentation, Stanley Webster, president, drew attention to the time and energy Mr. Williamson had devoted to association affairs over the years. "He can take as much credit as anyone," he said, "for the association as it is today."

Ontario Hydro Chairman W. Ross Strike said such recognition was overdue —an oversight he was glad to see remedied while Mr. Williamson still had time to contribute much to the technical and administrative welfare of Hydro in the province.

A graduate of the University of Toronto in Engineering, Mr. Williamson commenced his electrical career with Ontario Hydro in 1924. After a lengthy term in private industry, he joined the Niagara Falls Hydro staff in 1945 a assistant manager and chief engineer. He was appointed general manage in 1956.

He is shown at left in the photograph with Mr. Webster and M Strike.



*sincerity and devotion recorded*

## A Growing Fleet



*ship launching marked*

Mrs. W. Ross Strike, wife of the chairman of Ontario Hydro, released traditional bottle of Niagara champagne against the bow of the self-unlo ing coal carrier SS Ontario Power at the christening and commission ceremony at Port Weller Dry Docks, St. Catharines, in June.

The new Upper Lakes Shipping Ltd. vessel, 710 feet in length and wit capacity of 22,500 tons, is the largest vessel built on the Great Lakes both seaway and ocean trade. The Ontario Power will carry coal f Sydney, N.S. to Ontario Hydro's coal-burning stations on Lake Ontario, 10-day round trips.

Speakers at the ceremony included Mr. Strike, J. E. Clubb, presic of Dominion Coal Company and J. D. Leitch, president of Upper La Shipping Ltd.

Mrs. Strike is shown receiving a presentation from Jan Furst, vice-pr dent and general manager of Port Weller Dry Docks Ltd.

## Symbol Co-ordinator

James A. Blay, director of Public Relations, announces the appointmen J. B. Brown, formerly appliance sales officer in the Sales Division, as ordinator of Hydro's new corporate identity program.

Mr. Blay said that in conjunction with the design firm of Hatha Templeton Ltd., the Public Relations Division would co-ordinate all app tions of the symbol within the Commission. He said that many of associated municipal Hydro utilities were also adopting the identity prog

"We are very pleased with the interest being expressed in the new sy by the utilities", he said, "and we will be happy to assist them wit application, through our regions, whenever they have a problem."

# MUNICIPAL BRIEFS

**Robert T. Williams,** North Bay, formerly line maintenance engineer with tario Hydro's Northeastern Region, has been appointed general manage the newly-formed Widdifield Hydro-Electric Commission. David R. Stev former secretary-treasurer of Cache Bay Hydro has assumed the same tion with the Widdifield system. Widdifield Hydro officially took over system in the township from Ontario Hydro on July 1.

**Ideas on electric heating** for schools were exchanged by members of cour school boards and Hydro commissioners at a meeting sponsored by Espa Hydro, Ontario Hydro and the Northeastern Municipal Electric Associa Architect W. M. Salter, of Barrie, who has built 50 electrically-he schools, said the method is not only space-saving but "realistic." H plained the importance of automatic controls since a school is used about 30 per cent of the year. Other speakers at the meeting, which

ired by John Darby, of Espanola Hydro, included A. M. (Sandy) Bizell, sales erintendent, Ontario Hydro's Northeastern Region and Ted Dash, Sud- y, representing NMEA.

**ilton Hydro** is offering new incentives to encourage underground wiring ew sub-divisions. Where soil conditions are favorable underground sys- s may be installed at a flat rate of $200 per lot, with a minimum of 15 ses. The cost per lot to the developer would be reduced by $50 to $125, ending on the number of electrical appliances and services in the home.

**erborough and Stratford** have turned over street lighting maintenance to ervice company specializing in this field. The program includes lamp acement and regular washing.

**npton Council's** executive committee is studying a request of the Bramp- Water Commission that water and Hydro services be integrated.

**hton PUC** was among three local bodies to honor Miss Barbara McIntosh, ade 13 student who placed third in the impromptu division of the On- Public Speaking Contest. A silver tray presented by Douglas Haig, PUC rman, was part of a complete service. Other components were presented llage council and the district high school.

**kville PUC** is proceeding with the first phase of a $58,000 project to nd its Front Avenue headquarters.

**ked out by lightning** in June, Orillia Water, Light and Power Commis- s municipally-owned power plant at Minden is expected to be back in ation this fall. Most of the $100,000 damage was to remote control ment. While the Minden plant is out of operation the Orillia system has ased its purchase of power from Ontario Hydro.

**C. Fairchild**, of Montreal, has retired as general manager of the Cana- Electrical Association. He is succeeded by Don Campbell, also of real.

**ener Planning Director** Bill Thomson has taken the wraps off his de- l report "Kitchener 2000," which envisages the concept of a city- red region with the central city composed of what is now Kitchener, loo, Bridgeport, Preston, Hespeler, Galt and most of Waterloo Town-

y engineer W. L. Bradley describes the report's recommendations as thought out and feasible," and believes that implementation is only a r of time.

**ler's first** all-electric dwellings have been completed. The three du- s, two triplexes and two fourplexes, ranging in rent from $90 to $95 ing electricity and water, were all promptly rented.

**orough** Utilities Commission is stepping up its downtown underground program. Expected to be completed during the next five to six years, ted cost is $50,000 annually.

**en New Toronto students** who were winners in the 1965 local public ng contests sponsored by the PUC and District 4 OMEA, enjoyed a ted tour of the St. Lawrence area last month. Sponsored by the PUC, p included a visit to the international hydro-electric project and to s historic sites in the area. Engraved trophies were presented the ts during the tour. □

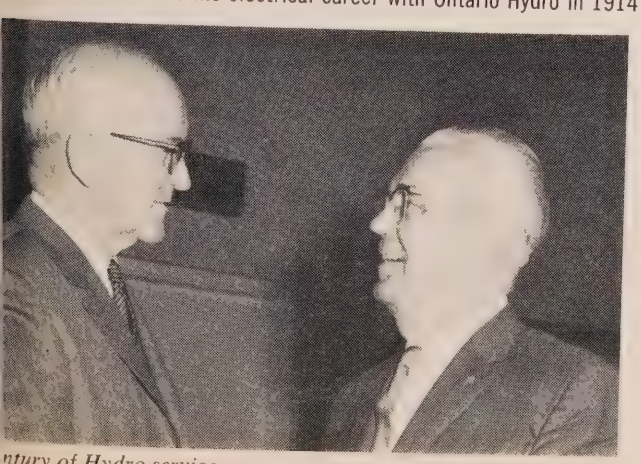
## otty" Hamilton Retires

ie years of Hydro service was the outstanding record chalked up by (Scotty) Hamilton when he retired as superintendent of Forest Hill ystem at the end of June.

Hamilton commenced his electrical career with Ontario Hydro in 1914 and he worked in many parts of the province on line construction. He was line construction superintendent when he left the Commission in 1937 to join Forest Hill Hydro.

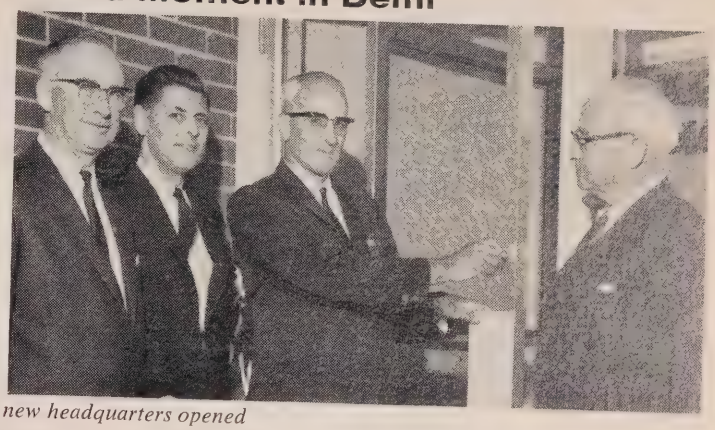
Not the least of Scotty's attributes is a fine baritone voice which helped entertain many an AMEU gathering after the business sessions.

He is shown receiving congratulations from Ontario Hydro Chairman W. Ross Strike. □



*ntury of Hydro service*

## Proud Moment in Delhi



*new headquarters opened*

For the first time in its 27-year history, Delhi Public Utilities Commission has its own headquarters. Designed to meet space requirements in the foreseeable future, the new $48,000 building on Church and Queen streets was officially opened in June. The utility had previously rented space in the town hall.

Of single floor plan and providing 3,000 square feet of office space, the new building features an electric heat pump capable of heating and air conditioning the structure on a year-round basis.

Outlining Delhi's electrical history to more than 100 persons at the opening ceremony, D. P. Cliff, Ontario Hydro commissioner, said the new building "exemplified the aggressive spirit of the community and reflects the steady growth that has taken place over the years."

Delhi PUC has doubled the 707 customers it was serving at the end of 1939, the first full year of operation as a municipally-owned Hydro utility. Average cost per kilowatt-hour has decreased from 2.56 cents in 1939 to 1.13 cents last year, while average consumption has risen from 64 kilowatt hours to 394.

Shown in the photograph, left to right, are: Wilfred Spicer, PUC chairman; W. M. Small, architect; John Passmore, manager and D. P. Cliff, Ontario Hydro commissioner. □

## Advertising Accolades

Ontario Hydro's advertising campaign to support the marketing objectives of both the Commission and utilities has won recent accolades at international and national level.

A 20-second TV commercial of two boastful boys acclaiming the desirability of electric home heating, one of 1,511 entries in the sixth annual American TV Commercial Festival at New York, placed in the semi finals of the overall class, and was selected "best" in the utilities class. The same commercial, produced by Petersen Productions Ltd. under the guidance of Hydro's Advertising Department and advertising agency, was declared "outstanding" at the Canadian Television Commercials Festival at Toronto.

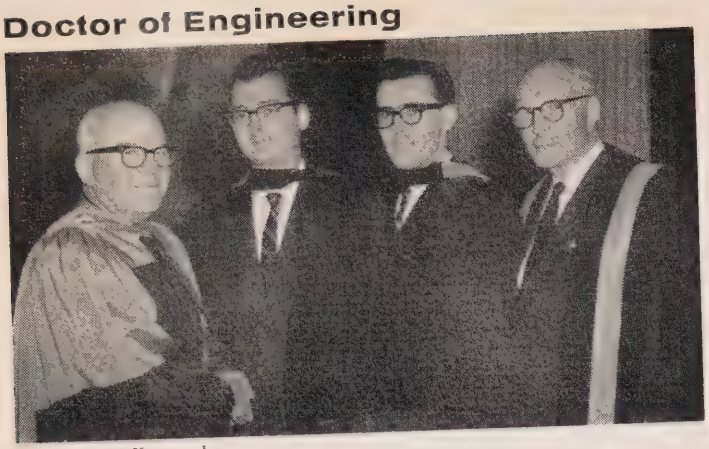
Hydro's newspaper advertising program has also been acclaimed. Marketing Magazine selected it as one of 14 "outstanding" campaigns conducted in 1964. □

## A Grateful Shah

Ontario Hydro's role in the development of Iranian power was praised by Premier John Robarts at a dinner in Toronto honoring the Shah of Iran and his wife, the Empress Farah Pahlavi, during their state visit to Canada. He said that the Dez River Project, 6,000 miles from Toronto, is being developed "with the assistance of specialized Ontario Hydro personnel as though it were part of the Commission's system."

In reply, the Shah praised Canada for its "unselfish technical help" to his country, and continued: "You have a mission to accomplish in the future world, and that is to shape it for the preservation of peace, honor and dignity." □

## Doctor of Engineering



*sheepskins all round*

Ontario Hydro's top administrator and two of his most junior engineers were conferred with degrees by Chancellor Dana Porter, right, at the University of Waterloo's tenth convocation. General Manager J. Mervyn Hambley, who received his engineering degree 36 years ago, became the university's first honorary Doctor of Engineering. He is seen congratulating new Hydro engineers Ivar Rand and John Bender who were among more than 100 students to graduate at the ceremony. Mr. Hambley was cited for his "outstanding contributions and distinguished career in the field of engineering." □

## Safe Electric Heat

Co-operators Insurance Association of Guelph is offering a 10 per cent rate discount on electrically heated houses.

Among the reasons for the preferred rate is the encouragement of heating systems which eliminate such problems as "blow back" when a furnace starts up and incorporate no open flame.

The absence of combustible fuel on the property, and the fact that electrically heated homes meet Canadian wiring code requirements and usually have a high standard of wiring, are added reasons. □

## Bolton Celebrates 50 Years

Bolton Hydro-Electric Commission celebrated its 50th anniversary with a "family-type" dinner attended by present and past commissioners, veteran employees and officials of Ontario Hydro. Presentations were made to Wilfred H. Maw, who was Hydro superintendent for more than 40 years until his retirement in 1956, and Mrs. Florence Kennedy who served for many years as meter reader.

W. Ross Strike, chairman of Ontario Hydro, reviewed the growth of Bolton Hydro and indicated how costs of electricity had been reduced over the years. He said that consumption of electric power in Bolton, as with other Hydro municipalities in the province, has been doubling every 10 to 12 years and predicted that there would be no let-up during the next decade.

Reeve Hilliard Allan, one of several speakers to praise the activities of the utility management and staff, declared that Bolton Hydro was one of the most efficient of the smaller utilities in Ontario.

The Bolton Hydro commissioners, shown left to right, are: Reeve Hilliard Allan; H. O. Houston, chairman; and Henry Wilson, secretary-treasurer. □



*outlook: continued growth*

## Size Barrier Cracked

While Ontario Hydro continues commissioning tests on its newest 300,000-kilowatt Lakeview unit and construction has started at Lambton where 500,000 kilowatt units will be employed, Consolidated Edison has started to operate the world's first 1,000,000-kilowatt steam turbine generator.

The Con Ed unit is located in Long Island City, in a plant which has a total capacity of 1,800,000 kilowatts. (Two 400,000-kilowatt units are already in service.)

The New York Times says the giant coal-fired unit will supply the power needs of 3,000,000 persons, but adds:

"The real importance of the unit is that the long-dreamed-of 1 million kilowatt steam generator has been built. It operates and it will pave the way for even bigger units in the future." □

## Tribute to Tesla

Tribute to Serbian-born Nikola Tesla, who ranked in importance with Edison and Steinmetz in the development and applications of electric power, was paid by members of the Karageorge Serbian Orthodox Church choir of Gary, Ind., during a visit to Niagara Falls. The 80 person choir, guests of a local Serbian Orthodox congregation, spent an afternoon sightseeing, and toured the Sir Adam Beck No. 2 generating station.

Milan Perick, president of the choir and a direct descendant of Tesla, declared: "We wished to see again for ourselves and to show our children not only the beauty of Niagara, but also the world's largest concentration of hydro-electric generation made possible by Tesla's accomplishments.

Tesla lived in the United States from 1884 until his death in 1943.

## Joint Northeastern Meeting



*NMEU helmsmen for 1965-66*

Municipal electrical utility representatives from across Northeastern Ontario met in North Bay recently for their annual spring conference. The delegates to the one-day meeting were attending joint sessions of the Northeastern Association of Municipal Electrical Utilities and the Northern Municipal Electric Association. They took part in discussions ranging from accounting, sales promotion and public relations to new methods in power distribution.

Elected to the executive of the NMEU, left to right, are: Gerald Delaney, Espanola, president; Dave Stewart, Cache Bay, past president; Grant Marshall, West Ferris, vice-president; Oscar Harris, North Bay, secretary-treasurer; and directors: Edward Bondar, Sault Ste. Marie; Percy Tomlinson, Sudbury; "Bev" Stroud, North Bay; and Roger Aubry, Sturgeon Falls.

## May Energy Production

Primary energy provided by Ontario Hydro in May, 1965, totalled 3.45 billion kilowatt-hours, an increase of 6.4 per cent over the same month a year ago.

For the first 5 months of 1965, the total is 18.20 billion kilowatt-hours, up 6.6 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand in May was 3.51 billion kilowatt-hours, .9 per cent less than the previous month.

The seasonally adjusted total for May represents 42.14 billion kilowatt-hours at annual rates. This is 302.9 per cent of the energy demand in 1949. □

# OFF THE WIRES



■ A recent edition of Electricity, published by the Electricity Council of England, points out an entry from Roget's Dictionary of Electrical Terms which describes extra-high-voltage as "an expression formerly used for a voltage above 3,000 between any two conductors."

Times do change, particularly in the electrical field. The term now generally refers to voltage above 230,000. Ontario Hydro's 500,000-volt line is scheduled for service this year; Hydro Quebec is building a 735,000-volt line; and the Russians are developing a 1,500,000-volt direct current system.

■ No one wants to stand in the way of progress but we wonder if the word isn't used sometimes as an excuse for taking the easy way out. In any event, we think the attitude exhibited at a recent meeting of the Galt PUC was refreshing. Told that city street widening plans called for the removal of some of the finest old trees in the city, the meeting examined plans and found that a minor change in a sidewalk location would save the trees.

How easy it would have been to OK the proposal as routine and sign away 100 years of effort on the part of nature to help beautify the streets.

■ And who says the nuclear-electric power concept in which we have so much faith is going to take a licking? The Canadian Post Office, that's who. Next year it will issue a special stamp for the purpose.

Peaceful Uses of Atomic Energy will be the theme of the new five-center, to be issued across the country on July 20. The date was chosen to coincide as closely as possible with the opening of Douglas Point Nuclear Station, being built by Atomic Energy of Canada Ltd., in conjunction with Ontario Hydro. The 200,000-kilowatt station is scheduled to go into service during the summer of 1966.

A busman's holiday might not be everybody's idea of a good time but we will still venture to suggest that Hydro employees and their friends vacationing near Commission projects with tour facilities take time out to view progress.

Might sound a little dull at first but mother and the kids would probably enjoy it and learn something about that mysterious force behind the light switch into the bargain. Come to think of it, there might be one or two fine points about the production of electricity from the atom, or even water for that matter, which aren't one hundred per cent clear to father.

These Hydro development locations are pinpointed on our back cover.

High bills in this era of low cost electricity pop up occasionally and for one reason or another but the cause of the excessive costs to a pair of Dover school will go down as a classic. Thanks to an error in construction, the toilets in a six-room addition built in 1956 were found to be hooked up to the water heater! This meant, in effect, that the heater was operating at full capacity continuously in an effort to keep the flushing water hot.

Even a Cascade 40, renowned for producing many times the hot water requirements of the average family, would have trouble with this one. Perhaps the electrician was a retired Hydro employee who got carried away with the theme — "Live Better Electrically."

■ And here's a bit of advice for meter readers who are having trouble with customers' canines. It comes straight from the mouth of a Hydro inspector who should know what he is talking about. Writing in Hydroscope, an employee publication, the inspector advises:

"There is a much simpler solution to the problem than repellants. It is to keep a female dog at home. As long as we have had a female dog, I have never been bitten by even the crossest dog . . . . ".

Not that we doubt the inspector, but the phenomenon is hard to explain. Perhaps he has always had particularly beautiful female dogs which the males hope to meet eventually, and daren't risk straining relations by nipping at the master's heels. Or perhaps they have been near sighted and mistook the inspector for a lady dog (a situation fraught with danger in itself.)

"The dog", the inspector goes on, "is the first member of the family you meet and, if accepted by the dog, funny as it may seem, the customer's attitude toward you is much friendlier."

Dogs, then, are well worth cultivating if you happen to be a meter reader. Forget the dog biscuits and endearing words — sex is the most direct path to a dog's heart.

■ Talking about dogs, training schools in France have started doing it electronically. Approved by the authorities, whoever they may be, the new obedience technique involves use of a special dog collar with a built-in small pushbutton at the master's end. Need we say more?

Trainers using the new system say it's less harsh than the old voice system. They argue, according to one report, that a dog's feelings are easily hurt if his master barks at him.

Maybe so, but if we were Fido we'd be inclined to choose the nasty words over a jolt of juice.

■ Four outdoor signs in the Kingston area, points out the Whig-Standard, were recently floodlit. A fifth remained in the dark. Its sponsor — Ontario Hydro.

Hmmm . . . haven't they heard that the best way to stand out is to be different?

■ We've all heard of heating systems failing during the owner's absence, with costly consequences in frozen plumbing and burst water mains, but never the converse. From Grand Rapids, Michigan, comes the bizarre tale of a woman who returned from a week's springtime vacation to find her house like an oven, quite literally. A faulty shut-off valve on the furnace was blamed for raising the temperature to an estimated 200 degrees for seven days.

Among the results: phonograph records and golf balls were melted, walls, rugs and furniture were baked an even light brown, champagne evaporated without popping the corks and 700 pounds of meat were cooked in the freezer.

We assume her husband was also away or surely he would have noticed it.

■ Another grave report comes from Mitchell where the cheery comfort of electric heating has been installed in the Woodland mausoleum. At the time of the newspaper account, there were 21 bodies awaiting burial. And not a single complaint about the heating system. Cold comfort, at that.

■ Electricity is our primary concern and we are fond of pointing out how three pennies' worth of electrical energy will hoist three and a half tons of ensilage or cook enough bacon and eggs to make us all thoroughly sick. But we shouldn't forget the boys who look after the other half of utility service — water. They, too, have a bargain to offer.

Accouding to George Cook, Preston PUC chairman, a plain glass of good old $H_2O$ costs his customers four-one-thousandths of a penny. During a discussion of water rates at a commission meeting, Mr. Cook also pointed out that whiskey costs about $25,000 per 1,000 gallons.

Hmm. That's an awful lot of whiskey, of course, but it does tend to suggest that water is the better value. Still, some will call for a compromise and mix the two.

■ And now to take some good advice published in a recent edition of Industry.

"Every now and then go away, have a little relaxation, for when you come back to your work, your judgement will be sure, since to remain constantly at work will cause you to lose your power of judgement. . . . Go some distance away because then the work appears smaller, and more of it can be taken in at a glance. . . ."

The author was Leonardo da Vinci, 1452-1519. □

# TOUR FACILITIES

If you are travelling Ontario's highways and byways this summer your family might enjoy a visit to one of Hydro's three big hydraulic stations where tours are provided, or the information centres at Canada's first two nuclear power plants.

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**DOUGLAS POINT NUCLEAR POWER STATION**
Scheduled for completion in 1966, Canada's first major nuclear-electric station has a fully equipped information centre jointly operated by Atomic Energy of Canada Ltd., and Ontario Hydro. Visitors see an explanatory color sound film and an animated board illustrating operation of the plant. An observation platform provides an excellent exterior view. Situated between Port Elgin and Kincardine, off Highway 21, the station is open Sunday afternoons until mid-May and every day thereafter from 10 a.m. to 5.30 p.m. until mid-September. At this time the centre will resume Sunday afternoon operation only.

**SIR ADAM BECK-NIAGARA GENERATING STATION NO. 2**
Open 9 a.m. to 4 p.m. all year and 9 a.m. to 7.30 p.m. during July and August. This is among the world's largest and best-known hydro-electric stations. Starting from the Information Centre at Queenston, visitors are shown a color sound film and taken down through the rock cliff to the powerhouse.

**ROBERT H. SAUNDERS - ST. LAWRENCE GENERATING STATION**
Tours include a visit to the control room, a panoramic view from the observation deck and a color sound film outlining the story of the realization of this long-held dream. Open daily, mid-May to mid-October, from 9 a.m. to 4 p.m. and to 7.30 p.m. during July and August. Tours arranged during winter months on request. Tours start from the administration building in Cornwall.

**DES JOACHIMS GENERATING STATION**
Largest of Hydro's four hydro-electric plants on the Ottawa River, the station is open during July and August from 9 a.m. to 4 p.m. seven days a week. One-hour tours begin at a lookout on Highway 17, north of Pembroke.

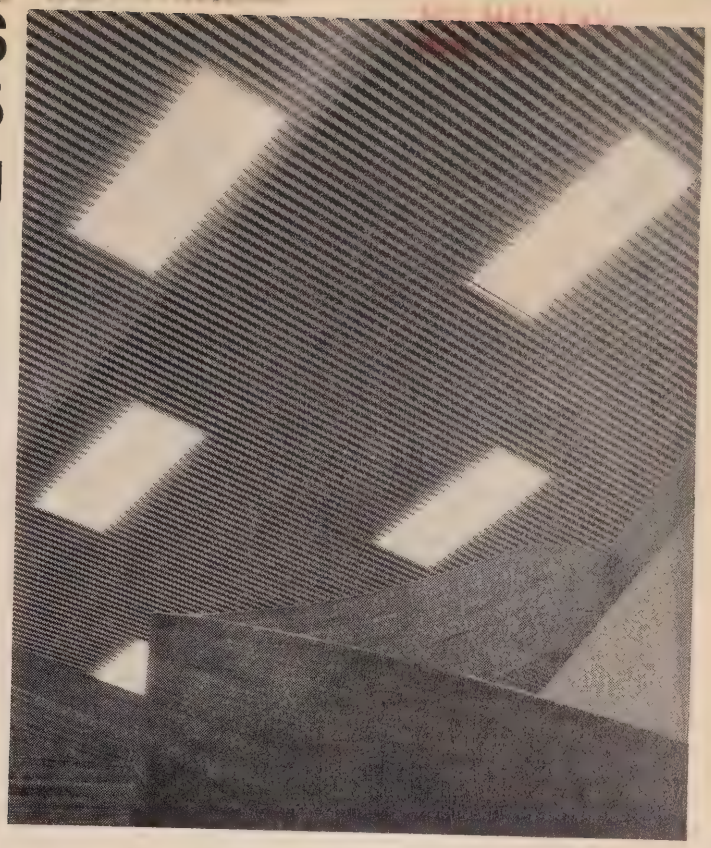
**NUCLEAR POWER DEMONSTRATION**
This prototype plant, off Highway 17 at Rolphton, is producing electricity by nuclear fission. Here, too, a color sound film outlines the construction and operation of this pioneer station. Visitors are welcome Saturdays and Sundays from 8.30 a.m. to 4 p.m. until mid-June, and thereafter during the same hours, seven days a week, until mid-September.

# news

## september/1965

## climbing the stairs to a new concept in municipal accommodation

see inside front cover



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ontario hydro news
september/65

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**Towers of Government.** Week-long festivities which began September 13 marked the official opening of Toronto's imposing new City Hall — a mam moth, $24,500,000 structure said to herald a new dimension in architec ture in Canada.

The outcome of an international design competition which drew 52 entries, the at-times controversial structure endeavors to bring greate public attention upon civic government. This is suggested by the oyster like council chamber as the focal point between two curved, high-rise ad ministration towers atop a two-storey podium.

The 11-acre square which spreads before the new headquarters for both the City of Toronto and Metropolitan administrations is claimed to be th largest undertaken by any city in three generations. With raised concret walkways on three sides, the square offers floodlit skating during winter an the cooling effect of fountains playing in a reflecting pool during summer The area will also serve as a venue for evening concerts, political rallie and other public functions.

The new City Hall has impressive vital statistics. Enough concrete wa poured (more than 185,000 tons) to build a three-foot sidewalk from To ronto to Montreal. More than 1,000,000 feet of electrical wiring an 11,000 fixtures serve the fully air-conditioned building. Lighting require ments totalling 10,000 kilowatts are sufficient to light 17,500 houses Snow melting cable is buried in all automobile and service ramps and i the podium roof at the entrance to the council chamber.

The two podium floors feature a lighting technique making its debut i Canada from Europe. Fluorescent tubes set in narrow, "snap-in" aluminu ceiling channels have all fixtures and fuses directly above. The tubes pr vide an overall unobtrusive lighting effect, and maintenance costs are kep to a minimum because of easy access to all fixtures.

Indirectly the new complex, including underground parking garage b neath the square, is electrically heated. Steam heat is piped in from To ronto Hydro's adjacent Terauley Street station, which also supplies the o City Hall. Two electric steam generators are "loaded-up" at night an steam produced in the electric boilers is injected into storage tanks an drawn off during peak demand periods.

Visitors from near and far will join Toronto citizens for the week ceremonies opening the City Hall. Missing from the ranks of the dignitarie however, will be the structure's architect, Viljo Revell, of Finland. Reve who described the complex as his greatest work, died in his homeland la year at the age of 54.

# side by side living

**Town house or maisonette — it's still row housing and it offers tremendous scope for the architect and planner.**

own housing, a form of shelter as ancient s Pompeii and as new as suburban Canada, undergoing a popular revival in Ontario's rger cities. Known by such names as aisonettes, garden court, cluster, group, rrace or patio houses, all come under the chitectural purist's designation of row ousing. In Canada, the most commonly used rm is town house.

Historically, the row housing concept — peating horizontal units sharing a common all — has appeared wherever people have ngregated in dense areas. The ruins of ompeii, the Indian Pueblo in Taos, New exico and Sixteenth Century Amsterdam flect this tradition. So too the Georgian and egency elegance of parts of England, with les of town houses later introduced to rly North American cities such as Boston, ew York and Philadelphia.

Some of the earliest brownstone town uses in Ontario can be seen at Kingston d Chatham. By the turn of this century w housing of brick and wood was appear- g close to the centres of most Canadian mmunities.

These, of course, bear little resemblance to e so-called town houses of today, which er tremendous scope for the imagination d skill of both architect and landscaper. e modern town house, in effect, affords a mpromise between life in a detached home d an apartment — without many of the dvantages of both.

Better use of high priced land plus a changing attitude of urban Canadians to housing are among the major reasons for the revival, according to developers. To many, the form of "instant living" made possible by the town house is the attraction.

Rentals, which in Metropolitan Toronto range from approximately $120 for a one-bedroom unit to $255 for a four-bedroom, often include all services from general maintenance to snow-shovelling, lawn-trimming and gardening. Busy executives, salesmen out of town for long periods or retired couples who feel they would be unable to adjust to apartment living, are thus afforded the best of two worlds through town house living.

Another sector the town house appeals to is what real estate men term "the transient buyer". He is the fellow whose job involves frequent transfers and who is fed up taking a loss every time he has to sell. Canadians move every four years on the average, and many town house leases include an escape clause if the occupant is transferred for business reasons. But an increasing number of town house developments are now offering units for sale in an effort to woo the person who regards a house as a good investment.

Hardly of appeal to the avid do-it-yourself or enthusiastic gardener, town housing is an excellent buy in terms of shelter as it permits important savings in community services and land development costs.

Both the townscape and the landscape benefit from the revival of the town house. For in joining the houses in thoughtful ways, architectural unity and urban spaces are restored, and nature is preserved by massing the architecture tightly.

Basic in the design and layout of the modern town house development is space for easy communication with neighbors and space for private living. Usually each town house has its own garden or patio enclosed in walls, fencing or heavy planting. These areas blend into communal land — perhaps a common area to the rear, or a courtyard or square in front — to give an overall "feel" of wide open space. Frequently the common areas contain such recreational facilities as swimming pools and tennis courts.

All the elements of architecture are skillfully exploited by developers to avoid the monotony of repeating town house units. Included are changes in setbacks, heights, wing walls, balconies, doorways, lights, window treatments, color and building materials. Individual expressions of the private spaces through landscape treatment add to the total effect, especially when contrasted with the public areas.

Separation of the automobile from pedestrians is another common feature of the modern town house development. Cars arrive at private garages either from service drives or underground — in the latter case, access to the garage is frequently through the basement.

Town houses in Toronto's Flemingdon Park, designed by architect Allan Grosman, have won international acclaim for both de-



*By joining houses together in thoughtful ways architects are adding distinction to a building concept long considered practical but unattractive. These modern examples of side-by-side living are in Metro Toronto area with an old row housing project included for contrast.*

STORY BY PAUL CHISHOLM
PHOTOS BY HARRY WILSON

sign and layout. Units are jogged and staggered for both eye-appeal and spaciousness, surface variation is added with hillocks created from earth excavated in the building of underground garages, and house types are varied in an "accidental" way—a three-storey next to a four-storey, as in older quarters of the city. Terrace units were developed as an alternative to the corridor-type apartments. These are simply one row house on top of another, the roof of the lower serving as t terrace for the upper.

Says Mr. Grosman: "In my opinion, ma housing is not an 'art.' When it tries to be think it loses contact with the vitality of t randomness of urban life. The forms of t latest units at Flemingdon Park are ba masonry, aiming for the simplicity of t farmhouse."

Another interesting town housing develo







t is the 1,700-unit all-electric Yorkwood
ge project in North York Township, now
s third phase. All services, including hy-
are included in the monthly payments.
arry Lyon, an official of the company,
s that one of the major reasons for in-
ng electric heating in Yorkwood Village
e system's ability to save space.
n row housing, space is of prime import-
and the builder must be critical of the use of every square foot," he declares. "We estimate the electric heating system saved approximately 20 square feet of floor space in each unit. In addition, the effective ceiling space was increased by the absence of duct-work and insulation cost was relatively low because of the common end walls."

Canada's first fully air-conditioned row housing project opened this summer in Etobicoke. Builder Ralph Ferracuti & Sons has installed an individually controlled duct heating and air conditioning system in each of the 60 units comprising Cambridge Garden Homes "because this is what the public wants today.

"Individual control is a big selling factor and with this complete system we can fill all needs," declares Mr. Ferracuti. "The air conditioning system is the first of its type and is designed specifically for town houses,



maisonettes and apartments. Ours are quality homes and we have to offer the best, which means heating electrically."

Varied as are the styles and designs of town houses already on the market, even more exciting projects are on the drawing boards, according to Toronto architect, Ubby Dashkin. Mr. Dashkin, who has worked on one project which incorporates two bedroom apartments atop masonry town houses, believes there is practically no end to the design possibilities which town house developments offer. He foresees greater use of built-in appliances in town houses and acceleration of the trend to "bulk" or single metering.

"Town housing represents a new phase of the rental market," Mr. Dashkin says. "There is a considerable backlog of demand in Toronto as the town house is meeting the needs of sections of the public previously uncatered to."

Town housing then, is gaining steadily in urban Ontario. Its greatest impact has so far been in the densely-populated Toronto area but it is gaining too in most larger centres. □

## town houses

The town house, as originally defined, constituted the London residence of the English landed gentry during the winter and social season. Completely enclosed for maximum privacy and usually in narrow, row form, the houses had a garden or courtyard separating the master's quarters from those of his servants. Typically, the servants were housed at the rear of the property above the coa house. Perhaps the most widely known tov house address is 10 Downing Street, the re dence of successive British prime ministers

To many, the form of row housing whi sprang up around factories following the i dustrial revolution is associated with pover and slums. North American land develope have come up with a variety of more "socia acceptable" names for row housing, the m popular being town house.

Ironically, most of today's "town" hous are in the suburbs. Further confusion added where the name is applied to old usually detached homes in the core area larger Canadian cities. Redecorated a given a face-lift, these too become "to houses."

# launching a symbol

by LOIS LANE

We tend to think in terms of black and white — or at least we think we do. Actually, there are many shades of grey in our mental process and it is these nuances upon which symbols depend for their usefulness — the subconscious association of objects and actions.

Who would ever think of associating a tiger with cereal, gasoline or a detergent? And yet, by constant repetition and visual exposure, the big jungle cat is actually looked for at the breakfast table, in the fuel tank or on the soap box.

Something similar applies where corporate identification is concerned and the distinctive new vermilion and orange symbol will soon be equated in the public mind with Hydro across Ontario. Already appearing on some Commission vehicles and other media, the symbol is also on the move at the municipal level with the blessing of the OMEA and AMEU executives.

Far from a haphazard procedure, implementation of the new Hydro look is a painstaking and precise operation designed to ensure maximum uniformity and effectiveness at minimum cost.

In the key role of symbol co-ordinator is Jack Brown of the Public Relations Division. Backed up by a knowledgeable, four-man AMEU committee, it is his job, through the regions, to assist any of the 359 municipal Hydro utilities wishing to implement the visual identity program. He also co-ordinates the program within Ontario Hydro.

"Some confusion is bound to exist at the outset of a program as far reaching as this," Mr. Brown explains, "and a co-operative approach is the best way I know to avoid mistakes and frustration. We have been accomplishing this by meeting with utilities wishing to implement the new Hydro look — preferably at a full commission meeting."

At these presentations, the complete corporate image program is outlined and the most effective application of the symbol is worked out in the light of the individual utility's requirements and preference. The presentation includes artwork and photographs of the symbol in conjunction with vehicles, equipment, bills, business forms and other applications.

"I might mention here," Jack Brown observes, "that once a utility has decided upon the exact form the symbol will take, it must be registered to avoid the possibility of encroachment."

The procedure is simple enough. A registration form, affixed with the utility's seal and signed by the secretary, is forwarded to Ontario Hydro where it is countersigned and forwarded to the Trade Marks Branch of the federal government in Ottawa. Cost of registration is $25.

"As it is in all of our operations, cost is a paramount consideration in arranging an implementation schedule," Mr. Brown says, "and it is worked out with the utility's inventory in mind. For the most part, the new symbol will first appear when fresh stocks are ordered, or when vehicles and equipment are in for repainting."

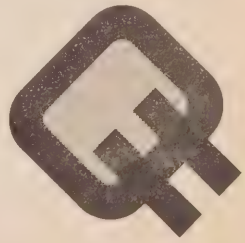
Participating utilities receive the master art work at no charge. To ensure uniformity in the appearance of all Hydro vehicles using the symbol, a "Hydro White" has been developed which can be obtained from the manufacturer by order number. Color chips are available for repaint jobs. Size, color and type face must all conform to make the application uniform throughout the province and the program more effective.

Interest in the visual identity program at the muncipal level is high and several presentations have been carried out at commission meetings. Which utility can claim to be first with the new symbol is a moot point but Newmarket Hydro was the first to apply for official registration.

"We chose the Hydro in Ontario "OH" design with our name at an angle below the symbol," explains J. L. Beadle, manager of the 3,000-customer Newmarket utility, "because it seemed to have the most eye-appeal. It will be used initially on our stationery and bills only. We have two line trucks but decided to wait until they are replaced before swinging to white."

Fledgling Gloucester Township Hydro, near Ottawa, which joined the Hydro family of municipalities, July 1, is also very much to the fore in the race to board the symbol bandwagon. Aside from its pleasing appearance, Manager Morris McEwen sees the OH symbol as a means of cashing in on Hydro's province-wide advertising. "Every time our







*Around the conference table, AMEU symbol co-ordinating committee ponders problems in launching Hydro's new look. Left to right are: H. J. Murphy, Barrie; E. F. Burbank, Toronto; Jack Brown, symbol co-ordinator; Norman Hathaway of the design firm assisting in symbol implementation; Ray Coles, AMEU; and H. E. Brownhill, Niagara Falls.*



*Brighton commissioners were among first to hear symbol presentation from the co-ordinator. Left to right: Jack Brown; Victor Southon, Eastern Region; Reeve Edward Solomon; Morris Herrington, commissioner; C. J. Acker, manager; and Douglas Haig, chairman.*

customers are exposed to the Hydro symbol," he explains, "some of the benefits rub off on us."

Indicative of the type of problem faced by utilities at this stage of the visual identity program was the one encountered by Brighton PUC. As manager Charles Acker put it, "We had to make up our minds in a hurry as we had a truck running around in the nude." He was referring to a new vehicle all dressed up in sparkling white but minus identification.

Details were quickly ironed out at a full presentation before the Brighton commission and their truck will likely be the first municipal vehicle to be adorned with the OH symbol. At the meeting Reeve Edward Solomon expressed concern about the use of all-white vehicles from the point of view of visual safety — particularly in the winter.

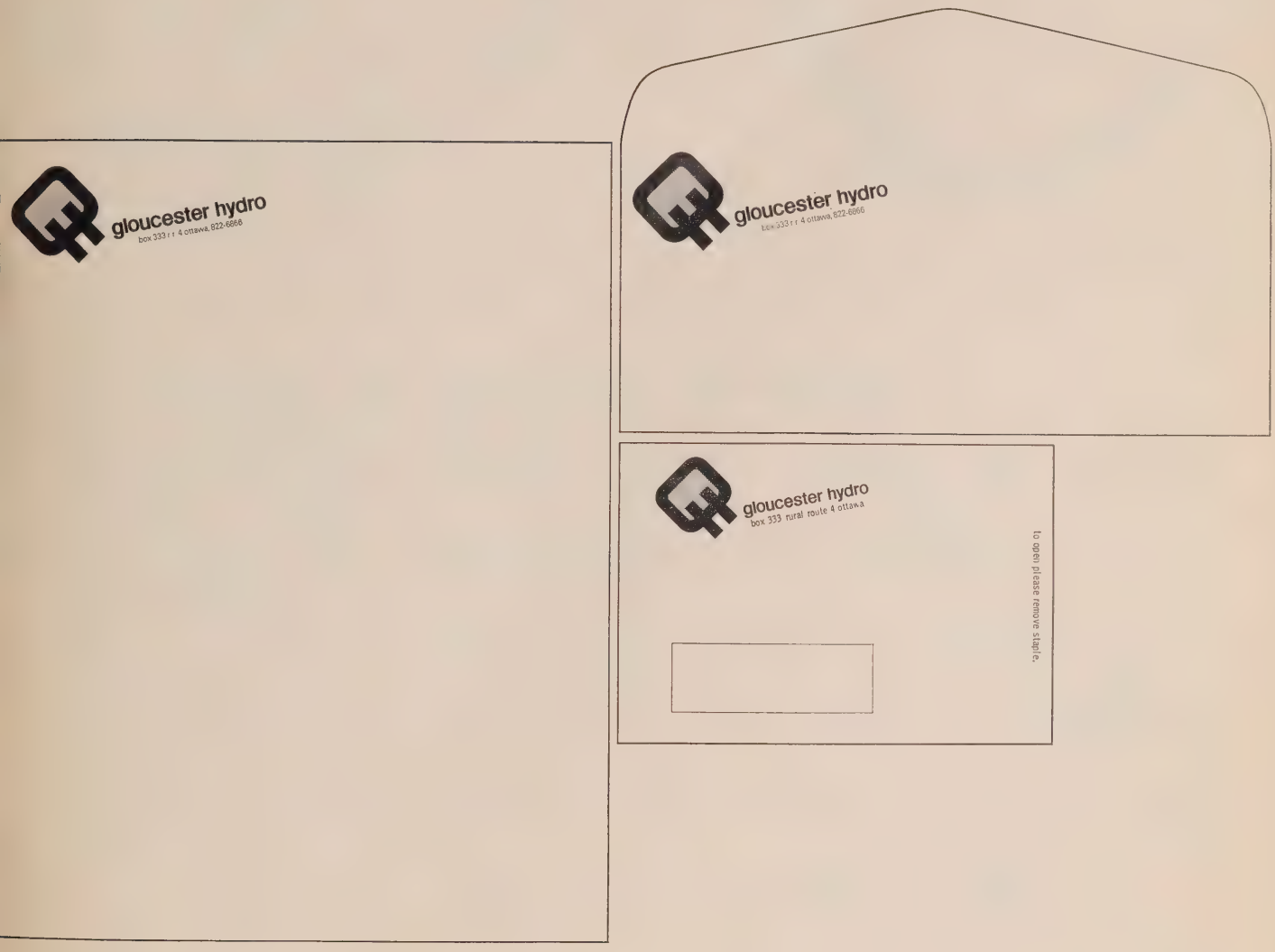
"Your truck will stand out both day an night, winter and summer, by incorporatin cross hatching of vermilion reflective pain on orange at the back and front of th vehicle," Jack Brown explained. "The bump ers and steps should be painted black."

Checks with fleet owners verified that glar was not a problem with white.

The Brighton utility, serving 1050 custom ers, plans to implement the symbol through out the operation. Three vehicles, stationery hard hats and even their water reservoir sig will bear the Hydro in Ontario design.

And so the task of visually linking Hydr utilities across the province proceeds. Other which have received the symbol presentatio include Widdifield, Burlington, Richmon Hill, Brockville, Grimsby and Aylme

*This is the new look as adopted by Gloucester Hydro for its envelopes, letterheads and bills.*




ious notations on the symbol co-ordin-'s memo pad point to a heavy schedule visits in the future.

Meanwhile, implementation of the symbol Ontario Hydro is proceeding on schedule. eral trucks of various types are already ssed up in the new look and it is estimated about 60 per cent of the big fleet will be nged over within the next two years. First ertising incorporating the symbol will be- appearing on television and in trade ers this fall with the remainder following early in the new year.

Rural bills bearing the symbol are now ng out to customers and the next batch of d hats received at Central Stores will sport OH insignia against an orange back- und — a departure from the familiar ow headgear worn by Hydro workers for many years.

In pointing out the thousand and one details involved in launching the new look, Jack Brown notes that there are no less than 700 different business forms which have to be considered as possible media for the symbol. Complications experienced to date run the gamut from helicopters to red heads.

In the case of the whirlybirds, lack of a suitable surface was a problem since visibility could in no way be sacrificed and the open fuselage would brook no changes likely to upset delicate hovering stability.

Suitable surfaces were not the problem with the girls. Shown some snappy uniform designs in the new Hydro orange, they shuddered at the prospect of conflict with red hair. Blondes and brunettes of today, they explained, were the red heads of tomorrow.

Buildings or brunettes, helicopters or hard hats — whatever carries the new insignia will come to stand at a glance for Hydro in Ontario. Only a symbol, perhaps, but it can help weld the many and diverse elements which constitute Hydro into a single dynamic force in the public eye. It is a tangible sign of an efficient and approachable organization whose image will continue to depend on the people it employs.

Speaking in conjunction with early symbol presentations, Ontario Hydro Chairman W. Ross Strike put it this way:

"I'd like Hydro to mean the same thing across the province and I believe a common symbol can help us toward this goal. It cannot be achieved without the full and enthusiastic support of the people who are Hydro." □

# now that the race is over, the man who came second reveals behind-the-scenes details never before published...read **the lurid truth**

by DAVID POPE
manager Sandwich West Hydro System

Reading between the lines of recent Ontario Hydro news releases (and, for that matter, reading the actual lines themselves), I gather the time has finally come for me to concede to designer Allan Fleming.

Mr. Fleming's new pronged-plug Hydro symbol has won approval from Ontario Hydro and the Ontario Municipal Electric Association, it has been acclaimed by the Association of Municipal Electrical Utilities and by the press so that, barring a devastating and unexpected counter-offensive, the thing looks to be settled. For some time now the prospects of my own design have grown steadily worse and the failure of the Beaver Falls Light & Power Commission to come up with any significant support for my candidacy will probably prove decisive.

I have therefore decided to throw in the towel. It has been a clean, hard fight, there are no recriminations and I now call on all my supporters to set partisan feelings aside. We must close ranks and move forward, shoulder to shoulder, behind the new emblem.

Although I am fairly sure Fleming doesn't even know it, this is by no means the first time he and I have crossed swords over the design of corporate symbols. There was, for instance, the Canadian National Railways job where Fleming's now-famous CN symbol barely beat out my own design, a representation of a day coach loaded with orange peelings backing into Hamilton. You may also recall the Bank of Nova Scotia project where my proposed symbol (a bank manager rampant on a field of NSF cheques), although unsuccessful, was widely regarded by my friends and colleagues as accurately capturing the essence of banking business insofar as they had any connection with it.

But the Hydro job, I felt, would be another story. It looked like I was in on the ground floor. Fleming, mind you, was in on the top floor where the Commission meets but nevertheless, with sixteen years in Hydro behind me, I still felt I had the jump on him.

Following my custom I decided to work behind the scenes, incognito, a technique I feel gives me a modest advantage over my opponents. The success of my precautions with regard to secrecy can be judged by the fact that my role in the operation was unknown to the press, the wire services, Ontario Hydro, the OMEA and even, for a while, my wife, who interpreted my furtive behaviour to mean I had just sneaked another copy of Playboy into the house. Fleming, of course, was completely unaware of my activities.

Realizing that I was perhaps too close to the problem, in danger of failing to see the woods for the trees, I was casting restlessly about for some means of tapping public opinion on this matter when the front door flew open and four female teenagers burst into the house. Instantly I recognized that here were the future housewives of Ontario, an eminently representative group and one that Fleming might easily overlook in his research.

"Girls," I said, "just off the top of your heads, how do you feel about Hydro?"

"Gee, Mr. Pope," said one of them, "I think Hydro is simply wild!"

"Check," agreed the next, "it swings!"

"The uttermost!" offered the third, "Really ecumenical."

The fourth, my own daughter, looked scornfully at her friends.

"Hydro," she announced with finality, "is antediluvian."

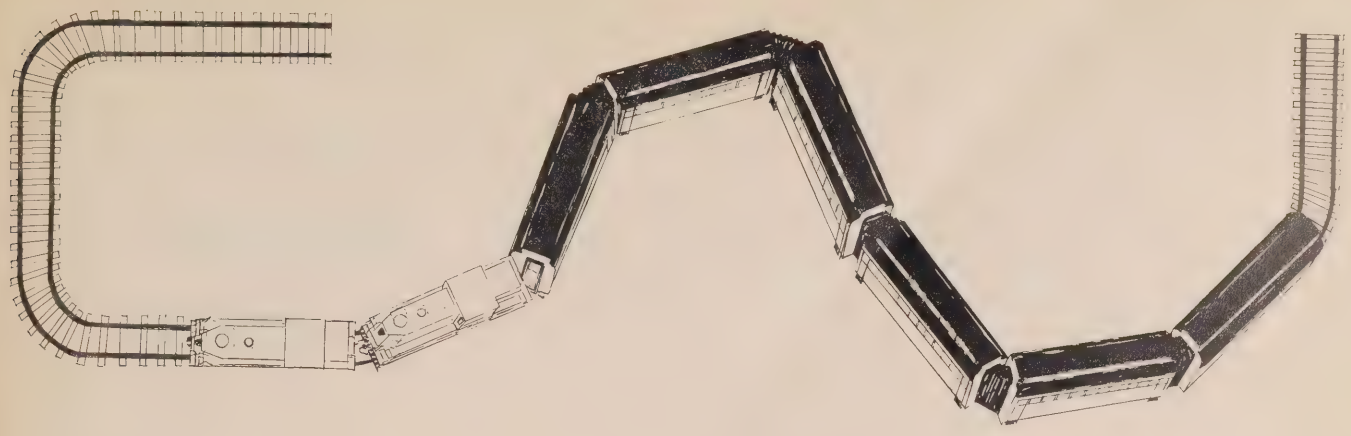
Overlooking this expression of ingratitude from a fledgling who had received her first worm in the nest as a direct result of a Hydro paycheck, I enjoined the four of them to put their heads together and see if they could devise a suitable symbol. They trotted off to the kitchen. From the sound of the refrigerator door opening and closing I concluded they were holding a dinner meeting to discuss it. However, the conversation quickly turned to hair styles and nothing of consequence resulted.

My next move, I decided, was to interview somebody more mature. That evening I turned to my wife.

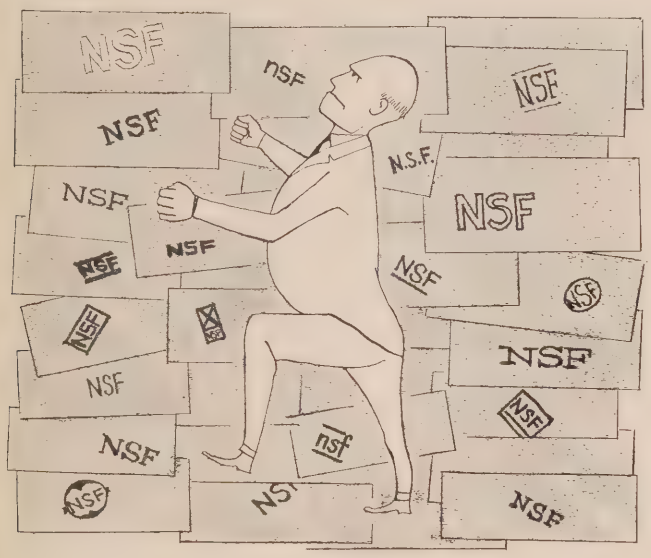
"I am groping," I told her, "for the inner essence, the fundamental image of Hydro. Kindly provide me with your immediate reaction to this concept."

She looked up slowly from her sewing.

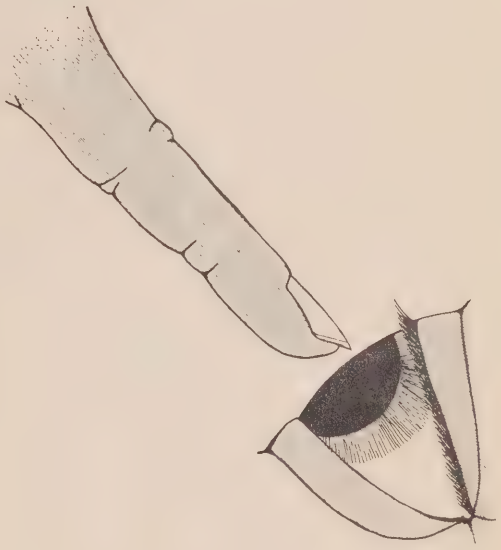
"I'm positive I've got the hard stuff under lock and key," she said thoughtfully, "and



*For the CNR — a day coach backing into Hamilton loaded with orange peelings.*




*Bank manager rampant on field of NSF cheques.*



*Pope's Hydro symbol lost out by an eyelash.*

're out of beer. You been into the vanilla ract again by any chance?"

'Okay," I replied with dignity, "lay off funny stuff for a minute and let's get ious about this. Great enterprises depend it."

'Sorry," she said calmly, "I just don't read ı."

'Well, suppose we start with something ıpler," I said, "now close your eyes and tell the mental picture you get when I say ins'."

She closed her eyes.

'A day coach," she replied, "I see a day ach strewn with orange peels and going ckwards."

'Right!" I said triumphantly, "it's back- into Hamilton."

'No," she answered, squinting a little, ruro, Nova Scotia, I believe."

'Never mind," I went on, "now do the ne thing for the word 'hydro'."

She closed her eyes again.

"The scene is clearing," she announced mystically, "I see — yes — I see a toaster that's been on the blink since last Christmas and I hear a husband promising to fix it. How about it Thomas Edison?"

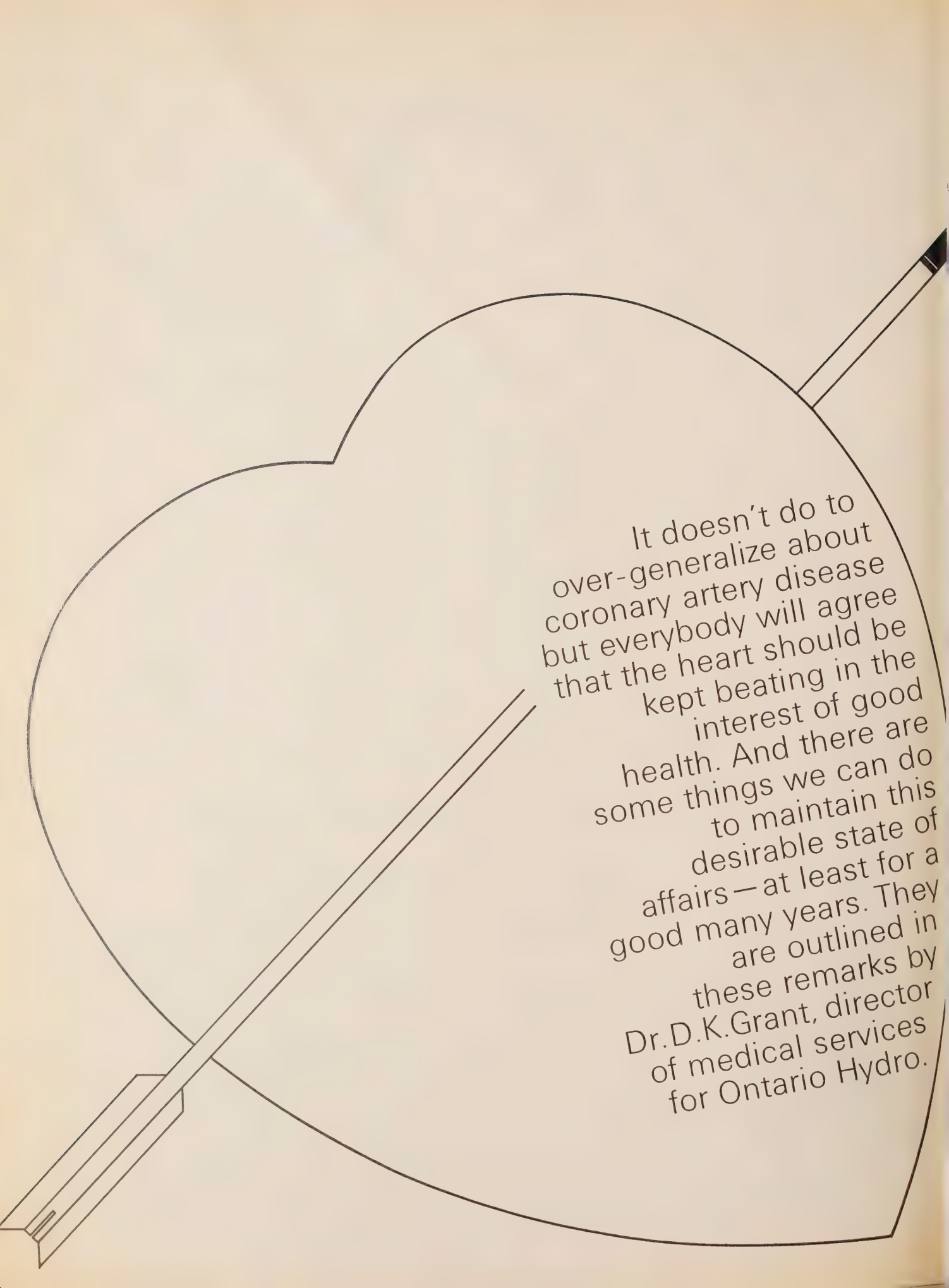
There was obviously no point in continuing that conversation. I turned on my heel and left the room.

I had barely re-addressed myself to the problem when it hit me. Here I was searching for ideas from representative people and yet I had overlooked the most representative people of all, the peoples' representatives themselves, the members of parliament. Feverishly I poured over back issues of Hansard containing Hydro debates, searching for a trend, a definite order, a pattern to appear and sure enough I found not one, but two distinct lines of thought emerging. Here, on the one hand, were government members pointing with pride. Across from them the opposition viewed with alarm.

This was obviously a classic duality and my fingers literally flew as I hastened to set the thing on paper. The finished design, a pointing finger juxtaposed with a staring eyeball, seemed to me superb and, except that the proximity of the fingernail to the cornea tended to make the viewer wince a little, it was well received by my colleagues. I was just preparing to submit it when Fleming burst on the scene with his now-approved symbol. The rest is history.

The final chapter to the story of corporate symbols has not been written. Time is on my side and I am prepared to wait patiently. I agree that Allan Fleming seems to have a fairly good lead, but the race is far from over.

And I think you'll have to admit that, as of right now, he's probably running scared. □


It doesn't do to over-generalize about coronary artery disease but everybody will agree that the heart should be kept beating in the interest of good health. And there are some things we can do to maintain this desirable state of affairs—at least for a good many years. They are outlined in these remarks by Dr.D.K.Grant, director of medical services for Ontario Hydro.

# doctor grant talks about hearts

Never ones to back down from a tough battle, ve Canadians seem to be letting our habits ive aid to one of our worst enemies.

The very way we live helps cardiovascular isease retain its leadership as the cause of alf of all deaths. Not that it's an easy oppoent. Infinitely patient, this sinister killer delops over 20 years or more and there's no ne germ or ailment or set of conditions gainst which to align our defences.

But this is no reason to let fat-cat complacency give the edge to Public Enemy Number One.

Its big gun is atherosclerosis, which is deeneration of arteries and blood vessels. This esults in progressive narrowing of the blood essel channel, sometimes accompanied by hrombosis or blood clotting. This process is ontinuous and may interrupt the blood flow o heart muscle. When the heart itself falls ictim to an interrupted flow of blood, part f it can die in the all-too-familiar "coronry" or myocardial infarct.

Not that the heart is fragile; far from it. his strongest muscle in the body daily prouces enough energy to lift a man to the top f the Empire State Building.

If you're a man, you automatically have n extra reason to learn about this killer and o what you can to keep your super-efficient ump going.

If you didn't know it before, this is a voman's world, and men are indeed the veaker sex — at least in matters of heart ealth. Among the feminine attributes we on't have is estrogen, a hormone which prouces certain interesting characteristics in the adies and is believed to protect against oronary heart disease. Up to age 40, for intance, 24 men will have heart attacks for very one woman. At 50, it's still 15-to-1 in avor of the ladies although the gap narrows s age advances because of a decrease in strogen hormone.

Apart from having the wrong gender, other things that may predispose to trouble include such ailments as diabetes, gout, too much cholesterol in the blood and too much uric acid. Here we get down to things we can act on. Regular physical checkups and early preventive treatment strip cardiovascular disease of these allies.

One easily-read barometer of danger is the belt, and "girth control" is the best strategy in the Battle of the Bulge.

Some figures that should make you watch your belt might be in order at this point. The death rate for cardiovascular disease is a fat 62 per cent higher for grossly overweight than for normal weight men. And it's 23 per cent lower for underweight than for normals.

Putting a 20-pound pack on your paunch instead of your back doesn't make it any lighter. In fact, it's more harmful. It makes the heart work harder because blood has to travel farther; it increases the chance of high blood pressure and of atherosclerosis.

Do we love our comfort and high standard of soft living enough to die for them? Many have.

Part of the pudginess problem is that we've become a nation of TV athletes; of fat cats who beget fat kittens who will be prime targets for heart attacks. Exercise should consist of more than our nightly race to the refrigerator during commercials.

Our "push-button living" means that we must make conscious efforts to get the exercise we need to burn up excess calories and improve blood circulation. The need for exertion in day to day living has all but disappeared. We insist on soft upholstery even in our chairbound travels, whether by land, sea or air. Modern central heating means we don't even use calories to keep warm.

A desperate dive into exertion on a weekend is neither adequate nor wise; it just leads to Monday stiffness. Exercise should be a regular thing, like walking more and driving less. Your doctor will help gear a program to your needs and limitations.

The doctor is also a good man to consult about diet. But generally speaking, it's wise to cut down the total calorie intake and particularly animal fats such as bacon, butter, cream and pastries made with lard. Trimming fat off meat, and broiling it instead of frying, is one way to keep the waistline from becoming a vast wasteland. Corn oil and other unsaturated vegetable oils have actually been shown to lower the level of cholesterol in the blood.

A good general rule for dieting is to eat less. Simply reduce the total intake of food by about one-third, maintaining a normal nutritional balance. The advantage of such a diet is that the individual can adopt it as a routine or habit with no need to change. Fad diets such as the so-called "Air Force diet" or "Astronaut diet" or "Drinking Man's diet" or "Mayo Clinic diet" all receive a great deal of publicity, often at the expense of the reputable organization with which they are identified. These are popular because they satisfy a desire for self-indulgence or for losing weight the "easy, painless" way. Some of these diets may be harmful and generally should be avoided.

Like it or not, there's ample evidence to indict cigaret smoking as a contributor to coronary heart disease, not to mention other ailments. Puffing is better done as a result of exertion than at the end of a cigaret.

Maybe this brings a double-barreled advantage to reducing the level of tension and stress. A constantly keyed-up body isn't doing its heart any good, and probably steps up the pace of smoking.

Sleep can improve the chances of survival. Adequate rest and regular exercise contribute to each other. Both help the body operate more efficiently, along with proper diet, and both can do wonders for tension.

The role which stress plays in coronary artery disease is rather obscure and varies with the individual. But there is little doubt that it is a factor, though not the sole cause of the disease nor involved in all cases.

On the subject of tension, my purpose hasn't been to cause undue anxiety. On the contrary, any hope we have of preventing and controlling coronary disease depends on information and the application of it. Intelligence is as vital in this war as any.

Even if all preventive measures fail, it may help to know that 80 per cent of patients survive the myocardial infarct. Successful rehabilitation to useful work is the rule rather than the exception. While it's easier for the manager and the professional man, even those whose work is strenuous can be helped.

Indeed, at least 75 per cent of those who do survive are ultimately returned to their normal work.

Still, you probably wouldn't feel cheated if you missed the whole business of coronary ailments. Prevention is to be preferred over rehabilitation.

Fighting heart disease by application of the proven, practical recommendations outlined here is vital for adults. For our children, it's even more important, since the disease can prepare its sneak attack 20 years or more before the dramatic onset. To be effective, preventive measures should be started and should become a way of life at an early age, particularly in males.

In reducing the tragic and often needless deaths of so many Canadians from cardiovascular disease, each of us can and should play an active role by increasing our knowledge and adopting an enlightened approach to its prevention. □

# senior citizens of the system

by NORM PANZICA

Reliability, peak output and long service are among the qualities many Hydro employees share with the generating stations they build, maintain and operate but when it comes to planned retirement, the people have the edge.

There is no usual length of service for generating stations. The over-50-year group of stations had a vital task in their time; some still do. Remarkably well built, their careers have been characterized by dependability, but what role should they play in this day of 300,000-kilowatt units, remotely controlled operation and interconnected systems?

These are the complex problems charged to the Hydraulic Generating Station Rehabilitation and Redevelopment Committee and, says Ches Piotrowicz of the System Planning Division — a member of the committee, "there is no rule of thumb. Each installation must be judged on its own merits and in relation to its ability to contribute to the system under changing circumstances.

"We're just finishing a study of DeCew No. 1, for instance. It was built in 1898 but, given some rehabilitation, our educated guess would be another 15 years or so of service."

Economy of supply and staff safety have to be considered. The committee — made up of men from the Engineering divisions and from Operations and System Planning — has to ponder, for example, when economics warrant extensive repairs to stave off excessive maintenance costs. They may recommend that a plant stay in service only until major rehabilitation is required.

DeCew is typical of a story told many times across Ontario: a pioneer is drawn to a rushing waterfall; a mill driven by water power is erected and a community grows. Then comes electricity to spur development.

Nearly 180 years ago, John DeCou (descendants changed the spelling), a United Empire Loyalist, came to the falls, four miles from what is now St. Catharines, and built a home. It was in this house, while DeCou was a prisoner of war, that Laura Secord gave Fitzgibbon the warning that led to victory in the battle of Beaverdams in 1813. The house was declared an historic site in 1953.

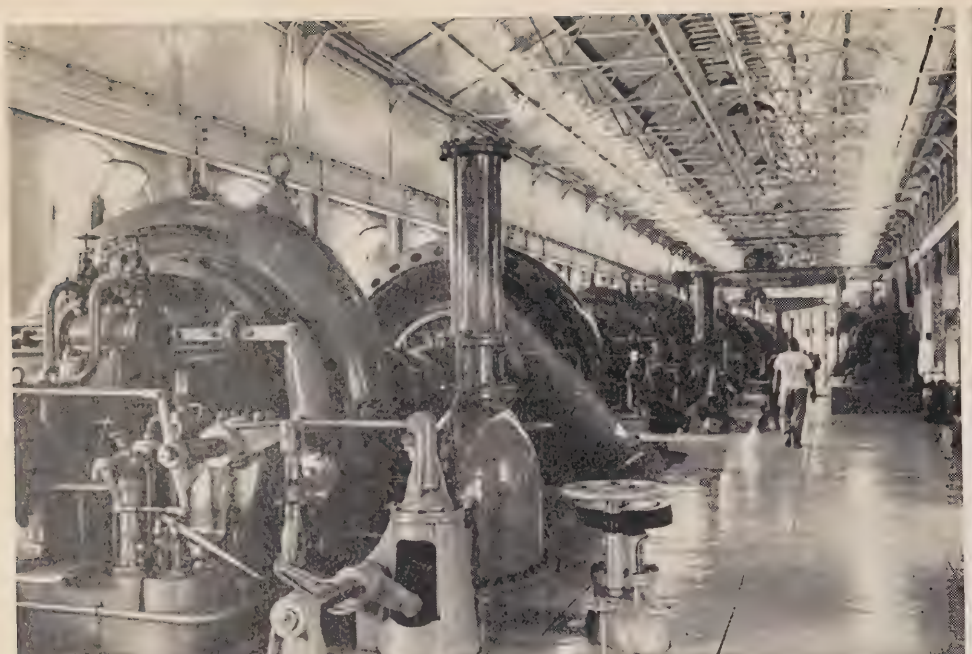
Morningstar mill, recently restored by

(*text continued on page* 16)





*Built in 1910, Hydro's unique Ragged Chute plant on Montreal River produces compressed air for mines.*





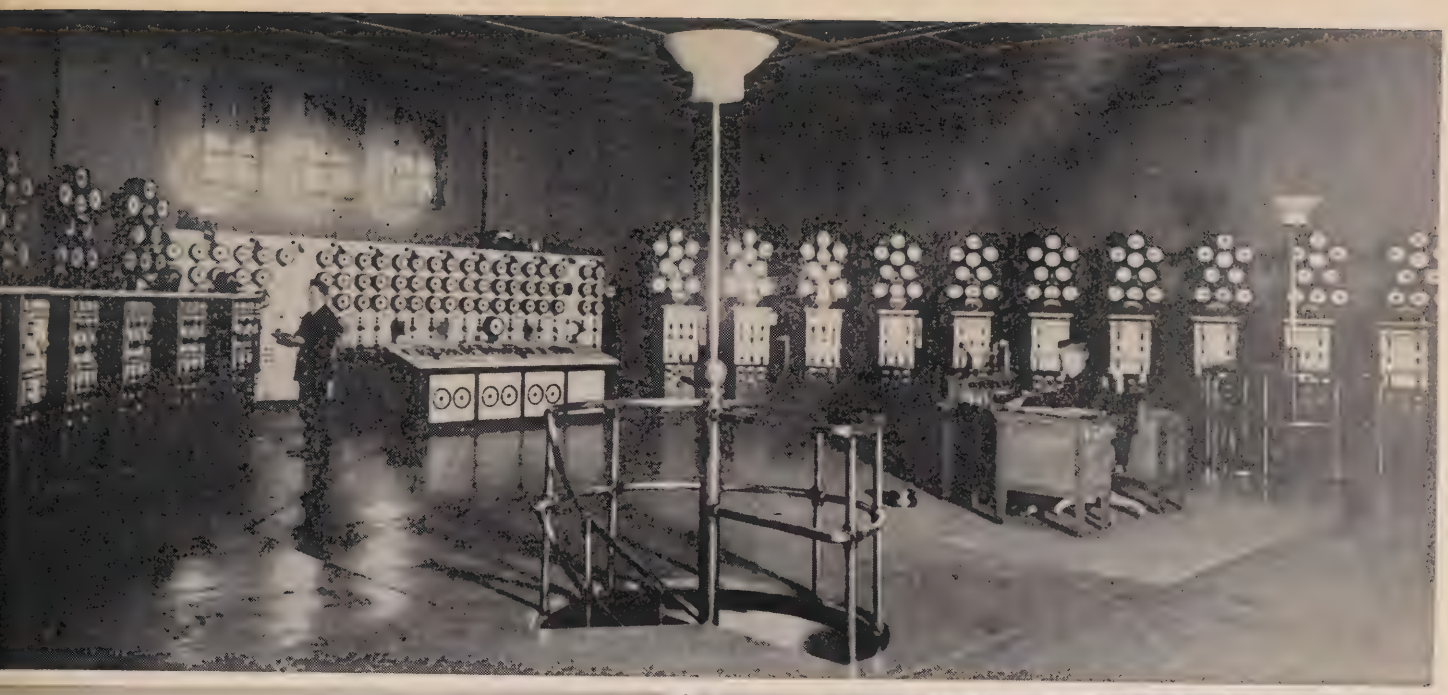


**some have retired but others are finding life begins at fifty for a generating station**

*Top left*: gleaming like new, original equipment at DeCew Falls plant near St. Catharines dates back to 1898 and still churns out the kilowatts. Oldest in the Hydro system, this station is good for another 10 or 15 years. It is near the site of Laura Secord's historic meeting with Fitzgibbon which led to victory in the battle of Beaverdams. Drawing its water from the Welland Canal, DeCew achieved renown at the turn of the century when its power was transmitted all the way to Hamilton — 35 miles.

*Top right*: primitive by today's standards, Hydro's N sing plant on the South River was built by private inte in 1909 and still contributes 2,100 kilowatts to the sys A long wooden stave pipe connects the plant intake w roofed-over penstock. Large wooden surge tank dom ing plant relieves penstock pressure.

*Above*: a far cry from the kind of concreting operation ployed on modern Hydro jobs (see page 18) this m plant was set up at the Eugenia project in 1914. Se generating project built by Hydro forces, Eugenia h 550-foot-high operating head — highest on the syste







: things have changed since this photo of the control
n of the Ontario Power Plant was taken in 1921 but
60-year-old veteran continues to generate 25-cycle
er needed by heavy industry. Controls were then
ted at the top of the building which later became
gara Region headquarters and still serves as district
e. Conducted tours were routed through the control
n which was impressive with its ornate "meter trees"
marble switch boards. Another item foreign to modern
rol rooms is the polished brass cuspidor.

*ve left*: first generating station acquired by Hydro was Big Chute on the Severn River. Built by the Simcoe Railway and Power Company in 1909, it is familiar to boaters on the Trent-Severn system because of the marine railway used to haul boats up the hump and around the plant. Some advocate a lock to replace the railway but others fear it would introduce lamprey into the waterway.

*Above right*: magnificent Kakabeka Falls on the Kaministikwia River are both an important source of power and a leading tourist attraction of the Lakehead area in Northwestern Ontario. Water is conveyed from rapids above the falls to a powerhouse a mile downstream.

# senior citizens

Hydro as a valuable link with the region's historic past, was built in 1872. Electric power came from DeCew Falls a generation later. DeCew No. 1 draws its water from the Welland Canal and has an installed capacity of 38,400 kilowatts. Often called the "cradle of Canadian hydro-electric power," DeCew's original generators are still in service; their bronze and brass gleaming like new. Acquired by Hydro in 1930, the old plant had achieved considerable early renown because its output had been transmitted to Hamilton — all of 35 miles removed. As Mr. Piotrowicz says, age isn't the only criterion in determining the fate of a generating station.

Cost is more important. Sometimes a plant works well, but its mills-per-kilowatt-hour rate is too high. In other cases, a newer plant may have no place in a developing grid. Tiny Rat Rapids on the remote Albany River, for example, contributed much to the mines of the district during the 29 years of its operation but it didn't fit in with the growing system.

Rat Rapids does continue to play an indirect part in the power supply of the province. When the Sills Island station on the Trent River, built in 1900 and acquired by Hydro in 1937, suffered a turbine failure in 1953, it wasn't worth repairing — until somebody found that a unit from Rat Rapids would work fine. Rehabilitated in 1963, Sills is probably the last in Ontario with a vertical turbine and a horizontal generator.

The committee usually puts two or three stations under the economic microscope each year. When the Walkerton plant, noted for its short 12-foot "head" or drop, had a turbine failure, repair was found uneconomical and it closed in 1956 after more than 60 years' service.

Sometimes modernization can extend a plant's life by reducing operating costs. Five of the ten Trent stations, for example, have been changed to remotely controlled operation over several years.

When Eugenia G.S. on the Beaver River, 30 miles from Owen Sound, needed extensive dam repair in 1961, anglers and cottagers were pleased to learn that the levels and the trout of the 1,700-acre head pond would be restored.

Eugenia was the second plant built by Hydro, in 1915. Its story began when a settler named Brownlee abandoned a deer hunt at the sound of the falls. His finding of pyrites (fool's gold) sparked a gold rush, and some of the prospectors stayed on.

The town and falls were named for Empress Eugenie of France by a sentimental ex-French soldier on a surveying team. By 1860, the river was working the Purdy Brothers' saw and grist mill.

William Hogg of Toronto brought electricity from the falls to Eugenia and Flesherton, about five miles away, in 1895. Some twenty years later, by horse and buggy, with sled and snowshoe, others came from Toronto — a Hydro team under engineers Otto Holden and Richard L. Hearn. Often isolated by snow and beset by sub-zero temperatures, they knew they were building for succeeding generations. As late as 1930, people came as far as 100 miles to see this station with its 550-foot operating head – highest in Hydro and among the highest in the land.

Coming up for re-assessment now, in its 56th year, is historic Big Chute, the first generating station acquired by Hydro, but early retirement is not contemplated. Long a mecca for Muskoka tourists, this Severn River plant was built by the Simcoe Railway and Power Company in 1909. Ontario Hydro acquired the plant in 1914 and added a fourth unit two years later.

Hydro now derives about 70 times as much power from a single unit of the Lakeview thermal-electric station but Big Chute has made a significant contribution in energy over half a century. And its construction was not without problems. Some recall how the largest team of horses ever seen in the area was used to haul in the 20-ton fourth pow unit over seven miles of rough ground l sleigh.

If its scenic surroundings haven't chang much in 56 years, the distribution of power has. Until a few years ago, it serv Barrie, Penetanguishene, Collingwood a Waubaushene — now it's part of the gri

Among the last and most picturesque the old plants acquired by Hydro is Kak beka on the Kaministikwia River, 20 mi west of Fort William. This 24,200-kilow plant was built in 1906 on a site so spectac lar that it remains one of the Lakehea major tourist attractions. It was over th falls, according to legend, that an Indi princess swept to her death while luri enemy tribesmen to a watery grave.

Another famous old-timer, the Onta Power plant at Niagara, is presently un assessment. This 60-year-old campaig serves heavy industry with the still-necess 25-cycle power.

Supplier of first power to the original Hydro municipalities, the plant sits long a low near the foot of the Horseshoe Fa almost at river level. The Ontario Po Company, which sold the plant to Hydro 1917, is said to have spent more than a r lion dollars in maintaining the natural bea of the site.

Two years younger, but infinitely pur in terms of output, the Galetta plant on Mississippi River will retire in the near futu This 800-kilowatt veteran was acquired Hydro in 1929 at the age of 22.

"Galetta is marginally economical," s Mr. Piotrowicz, "so the committee has rec mended that no major repairs be undertak Operations Division will decide when to cl it, either because of needed repairs or staff safety."

Joe Steven of Hydro's System Plann Division says the small old plants were p ducts of sound planning and did their j well. Some were acquired with local syst where they served local needs and more more of the least productive will inevit be retired.

But as proven at Bala, Wasdell Falls elsewhere, "planned retirement" is not ne sarily synonomous with oblivion.

Bala established a small park near historic plant and Hydro erected a c memorative plaque to keep its story be the public.

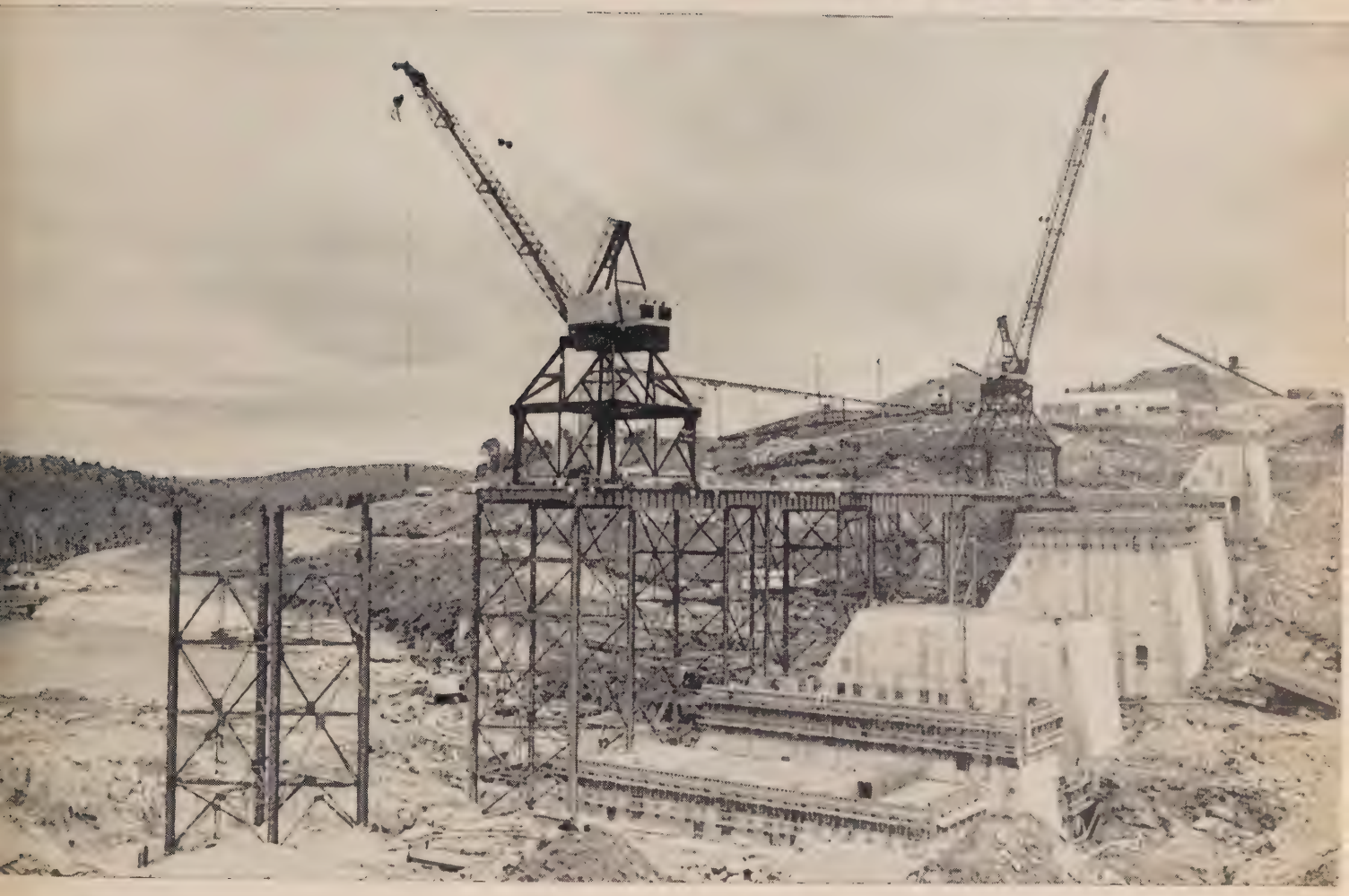
The same year, 1963, saw a similar c mony at Wasdell Falls on the Severn Ri first plant built by Hydro. This small p ducer was retired in 1955, not because physical weakness but for reasons of econ and obsolescence.

Rehabilitation where possible; retiren with dignity where necessary — either the reliable pioneers who served so well so long won't be forgotten.

## these are the ten oldest generating stations still contributing to the ontario hydro systems

| plant | river | initially placed in service | acquired by ontario hydro | installed capacity (kilowatts) |
|---|---|---|---|---|
| DeCew Falls No. 1 | Welland Canal | 1898 | 1930 | 38,400 |
| Hanover | Saugeen | 1900 | 1929 | 300 |
| Sills Island | Trent | 1900 | 1937 | 2,000 |
| Coniston | Wanapitei | 1905 | 1930 | 4,100 |
| Ontario Power | Niagara | 1905 | 1917 | 132,500 |
| Kakabeka Falls | Kaministikwia | 1906 | 1949 | 24,200 |
| Toronto Power | Niagara | 1906 | 1922 | 91,800 |
| Galetta | Mississippi | 1907 | 1929 | 800 |
| Big Chute | Severn | 1909 | 1914 | 4,000 |
| Nipissing | South | 1909 | 1916 | 2,100 |

# giants on the madawaska



by LES DOBSON

Two mechanical giants lumber across a remote valley in Southeastern Ontario. Below their crablike progress a river has been blasted from its course. Trees fall — amid the general turmoil of water, noise and dust.

It's a scene which invokes Wellsian fantasies, but the truth is more prosaic — Ontario Hydro has returned to the Madawaska River.

With 500 hard-hatted workers, two giant cranes and all the expensive paraphernalia of heavy construction, Hydro aims to complete the $27,700,000 project by the fall of 1967. It will produce 139,500 kilowatts.

# progress at mountain chute



Speed and efficiency are the bywords in this operation at Mountain Chute, 22 miles southwest of Renfrew, where estimates call for the pouring of half a million tons of concrete during construction of the massive main dam.

Dominating the valley are the two enormous cranes, largest ever employed in Hydro construction, both of which track across a 110-foot-high bridge to hoist concrete into the heart of the project.

Three yellow-painted diesel locomotives shuttle back and forth on a short stretch of track — nicknamed the "Calaboogie Railroad" by some — hauling buckets of concrete onto the bridge from an ultra-modern mixing plant nearby.

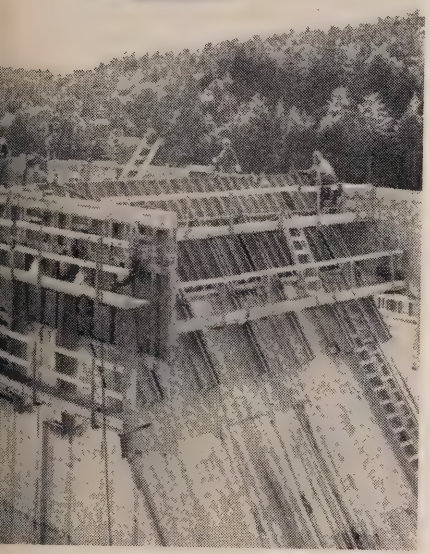
Two operators control the entire mixing plant operation to produce up to 280 tons of concrete an hour.

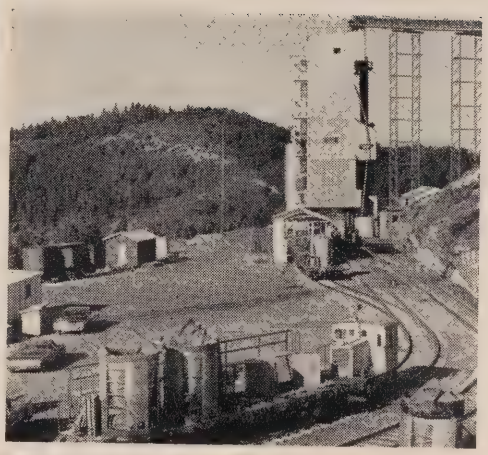
Into the mixers are fed crushed rock in four sizes, sand, water and two admixtures — a water-reducing agent and an air-entraining agent which introduces microscopic air bubbles to make a more durable concrete.

Fly ash and cement complete the recipe. The fly ash is added for economic reasons and to reduce the amount of heat generated

*Night and day the concrete flows at Moun Chute where a shuttle service between the c crete plant and the project is carried out diesel locomotives. Giant buckets of conc are swung into place by largest cranes e used in Hydro construction. Mountain Chut scheduled for completion in fall of 1967 Hydro forces will remain on the Madawc until 1968 increasing capacity at Barrett Ch*









concrete sets. The plant is capable of
ing 32 different varieties of concrete
push of a button.

gely unaltered since the retreat of the
nary ice sheets, Mountain Chute's
ape will be transformed by the project.
g of the 175-foot high main dam will
a lake 21 miles long.

dam will raise the level of nearby
Donald Lake by 60 feet to engulf what
s of a worked-out graphite mine and
ent. Clearing of trees and brush from
cres of headpond area is well under-

The Madawaska has been diverted neatly to one side of the project to roar protestingly through a narrow channel blasted out of solid rock. Protective cofferdams have been built around the dam and powerhouse excavations in the former river bed.

Other changes are already apparent to bewildered tourists, who pull their boats and trailers to one side of narrow wilderness roads and wind up their windows against the dust of morning and evening rush hour traffic. For unlike many hydro-electric projects, workers commute to the site daily from their homes, mostly in the Renfrew area.

One American visitor blundered on to the project on his way to a nearby lodge. "I've been coming this way for 20 years, and thought I'd stumbled on some secret military installation," he told security men at the entrance to the site.

Four miles of wide access road have been built and sections of Highway 508 improved. Mountain Chute's two generating units will be delivered along these roads after being shipped by rail to the village of Calabogie, 10 miles away.

Amenities at the project range from two-way radio to drinking fountains. To maintain contact with the outside world, Bell Telephone has installed a 12-channel microwave system between the site and Renfrew, eliminating the need for poles and wires over difficult terrain.

One channel of the $200,000 system is used as a direct line to Ontario Hydro's Head Office in Toronto. Another is used by the Department of Lands anf Forests. Two more provide pay telephone services at the site.

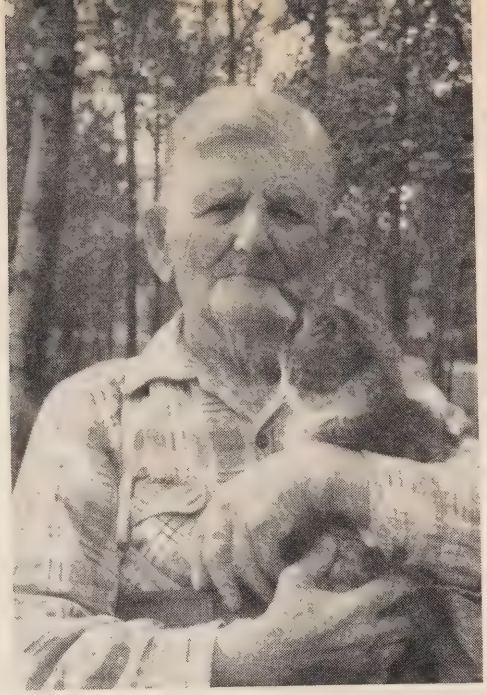
Mountain Chute will operate to meet morning and evening peak power demands together with two other major stations on the Madawaska—Barrett Chute and Stewartville.

Stewartville produces 61,200 kilowatts. Barrett Chute turns out 40,800 kilowatts although a $14,000,000 extension will bring the station's capacity above that of Mountain Chute by 1968. Many workers at Mountain Chute will be offered jobs at the second project when construction starts next summer.

All this hubbub at Mountain Chute will end as dramatically as it began when the project reaches completion in a little over two years' time.

Gone will be the workers and the machines. Only the humming of two generators will break the stillness as they spin unattended, remotely controlled from either Barrett Chute or Hydro's Chenaux Falls generating station on the Ottawa River. □

by NICK NICKELS



# sprite of the madawaska

'A soupler or a better boy we'll never see again.' –*The Boy from Calabogie*: William Henry Drummond

Early on the morning of June 10, 1850, at a cabin on a clearing farm one and one-half miles from the present community of Calabogie, Ontario, a baby was born to Sarah Hunter Church with the assistance of a neighboring Scot midwife.

"He's a wee laddie," the woman told the young mother as she laid the firstborn in a sap trough cradle beside the bed.

The baby's father, Thomas Church, who had come in from the barn for his breakfast, made the same observation while wondering about the puny infant's chances of survival.

Whatever the odds, under-sized baby Spencer Church thrived to become Canada's oldest living citizen. He lived for 110 years and eight months, achieving a miracle of geriatrics under primitive circumstances where 40 years was considered the normal life span.

I visited Mr. Church two months after his 109th birthday at the home of a daughter-in-law, a short distance east of Calabogie hamlet.

Spencer Church stood four feet, four inches in his handknit woollen socks and slippers and carried his 100 pounds with supple grace.

His face was full, clean-shaven and rosily healthy. His blue eyes surveyed a person thoughtfully from beneath down-drooping lids and he smiled readily, missing little, even though he was a mite deaf. With his full head of straight, white hair neatly barbered and parted on the left side, Mr. Church was a lovable-looking, rascally old fossil of a fellow, if I ever saw one.

His growing deafness and visits by hundreds of nosey strangers had resulted in a pattern of visitation that was strong on welcome but weak on talk. Mr. Church sat down briefly at the table, then rising again, beckoned me into "the front room." There, displayed in abundance, was the documented proof of his longevity and wide acquaintance.

Inscribed silver trays stood on sideboards. Framed salutations decorated the walls. A sheaf of cablegrams, bundles of telegrams and piles of congratulatory letters and cards overflowed table tops and drawers.

Most of the collection had been received on his 100th birthday and the tokens of his current decade seemed redundant. He waved his hands in a casual manner at this and that and a final shrug of his shoulders asked "what more is there to say?"

The eldest of 16 children, Spencer Church's childhood terminated at the age of 12 years when he went to work on the river for man's wages, $13 a month.

Known as "the smallest man on the Madawasky," Spence' Church could nevertheless "h'ist 475 pounds on the lifting scale." He made two trips to Quebec City, " a gay place," on square-timbered rafts. And tiring of hard years on the river and in the bush went silver mining in Cobalt "with ta candles in my felt hat."

He returned home and applied his r found mining knowledge at the Black I ald graphite mine, 14 miles from his h and young growing family. (The wor out mine will be flooded in connection Ontario Hydro's Mountain Chute Deve ment.)

Spencer Church and his wife had four and seven daughters. They farmed for sev years after the mining days and when his died in 1924, he lived with a son at I Falls, then finally at Calabogie where I vi him.

That afternoon we decided to go f short walk in the rough pasture field b the house where the old man got an exce view of his beloved Madawaska River called to a grandson to fetch him a sta steady him over the uneven ground and v the boy handed him a piddling branch old man threw it away in a great sho spirit, and chose a stick for himself.

I left Spencer Church calm and colle at the kitchen door. Having won me with his considerable charm, he floore completely with his immense optimism v he invited me to, "come to my birthday next June."

I didn't go, although I read that it v great family affair. And in the follo 1961 winter, I read again in several pap news service report of his death. I later a his youngest son Gordon, about the caus he supposed "it was just old age." Sp Church was four months short of his birthday.

His descendants today include six son daughters, 50 grandchildren, 98 great-g children and 18 great-great-grandchil His father lived to 92 and his grandf until 102 years. But puny Spence ou them, and all living Canadians up to year.

## hydro offspring

Spencer Church's youngest son, Gordon Church, 63, lives in Calabogie. He started with Ontario Hydro there in 1928 when the plant was owned by M. J. O'Brien. He went to Barrett Chute in 1939 and he worked as a rigger at DeCew Falls, Nipigon, Stewartville, La Cave, Niagara, Red Rock Falls and Douglas Point. He retired in 1962. Three of Gordon's sons are currently with Hydro: Merrill, 38, a rigger at Little Long; Lyle, 36, a carpenter's helper at Mountain Chute; and Glenn, 34, a tower man on transmission line construction. □

# along hydro lines

## te on Power Costing

l general meetings of several Ontario Municipal Electric Association ts in recent weeks have overwhelmingly approved proposals for a ower costing system.

ed at establishing more uniform wholesale power rates for the 359 ipal Hydro utilities, the proposals result from an extensive study taken by Ontario Hydro at the request of the OMEA.

the two costing systems evolving from the study, OMEA's board of ors favors that which fully retains municipal utility equity in the system. By late August, five of the nine OMEA districts had endorsed rectors' recommendation for this system, which recognizes previous ements on both sinking fund equity and frequency standardization ing and retains cost differences resulting from these features. The system outlined by Hydro would eliminate all cost differences except resulting from ownership of facilities.

pproved, the new costing system would be effective January 1, 1966. ll as reducing variations between municipal utilities in the wholesale f power, the system would make for greater stability in retail power

R. H. Hay, of Kingston, president of OMEA, states that wholesale costs for more than 300 utilities would decrease as a result of the n. Where increases would occur they would be so small it is unlikely ould affect retail rates.

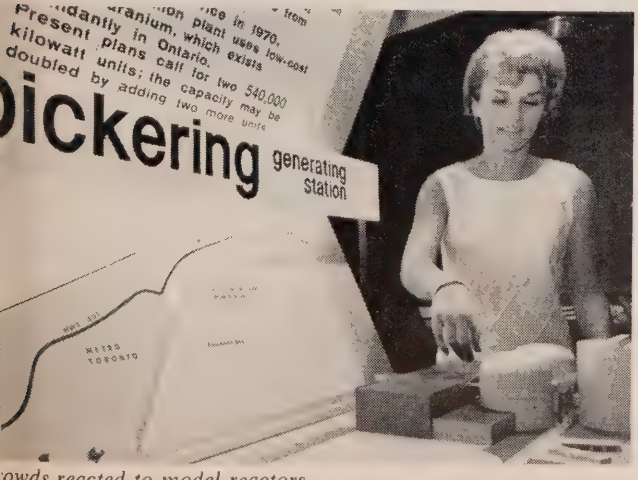
EA districts 4, 2, 6 and 3 will have voted on the issue by Septem- 5. □

## s Year at the "Ex"

any thousands who visited Ontario Hydro's display in the Better Centre of the CNE saw how power is produced, what it can do — t an introduction to the new symbol.

roaching the 7,500-square-foot area from the Toronto Hydro display it, the visitor saw the symbol with the words "your hydro" as its n a white square about six feet by eight feet attached to the white vall.

de, 18 pretty Metro high school students served as hostesses, giving ntary on "The Story of Light and Heat", a series of tableaux extend- m the caveman to the Medallion home. Models of thermal and nuclear




owds reacted to model reactors.

generating plants included one of the Pickering Generating Station, shown.

"The Rain Cycle," featuring a large model of a city and surrounding countryside, illustrated the role of water in all forms of generation. Refurbished, repainted and generally brightened up, the display also included a staffed information booth on the many forms of electric heating available.

Also on display was a remotely-controlled, electrically operated window which could be opened or closed from anywhere in the room. □

## Brantford Retirements



*This trio is proud of its record.*

Stepping out into retirement after completing a combined total of 101 years service with Brantford PUC are Wilfred Fawkes, left, 21 years in the water department and as office building superintendent; Miss Grace Simington, 47 years in hydro accounting; and Clarence Brown, 33 years as service foreman following nine years with Western Counties Electric which was absorbed by the utility. The trio was feted at a party attended by PUC employees and officials. □

## The Customer Comes First

Predicting an era of unprecedented expansion for the electrical industry, J. Mervyn Hambley wound up his 12-month tenure as president of the Canadian Electrical Association with several important recommendations. Among them was the suggestion that the industry shift its emphasis from the product to the customer.

Speaking at the association's annual meeting at Murray Bay, the Ontario Hydro general manager said that there was a danger in the tendency to think in terms of "the electricity-producing industry" rather than of "utilities which sell energy."

He said: "The average consumer of electric energy is not particularly excited about our gigantic and grandiose schemes for producing energy and transmitting it. His only concern is that when he pushes a button or flicks a switch, things begin to happen. He doesn't really care where the energy comes from."

The control of fresh water supplies was another subject touched on by Mr. Hambley and he recommended that the association be prepared to take a stand for the industry in matters of this nature. "It might be worthwhile," he said, "to designate an area of responsibility within our existing committee or section structure, or else form a special committee to study the water situation with a view to developing an overall CEA policy."

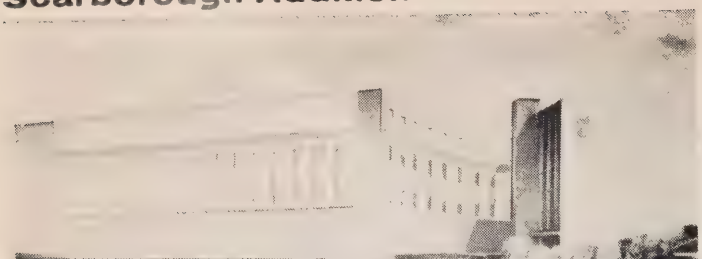
The retiring president also felt the association should direct more attention to nuclear power developments. He welcomed the news that Hydro Quebec was considering construction of a natural uranium reactor using "light" water as a coolant—a development he thought would add new interest and impetus to the Canadian nuclear effort. It was only a matter of time, he said, before the other provinces became interested in nuclear power.

Mr. Hambly expressed some concern over the profusion of organizations within the electrical industry. He said:

"I am sure that anyone who has given any thought to the matter cannot help but be confused and perplexed by the great number of associations, leagues and councils that are to be found within the electrical industry."

Fearing duplication of effort, he thought the industry would be well advised to shun the formation of new groups and to consider the amalgamation of some that already exist. □

## Scarborough Addition



*A new wing for Scarborough.*

Work is underway on a $250,000 addition to Scarborough PUC's headquarters. The new, electrically-heated wing is necessary because of an increase in staff and the introduction of a data processing installation. It is expected to be opened next spring and will be financed from existing funds. □

## municipal briefs

**Windsor's annexation** of two neighboring towns and parts of three townships has been confirmed by the Ontario Cabinet. The amalgamation of Riverside, Ojibway and parts of the townships of Sandwich East, Sandwich West and Sandwich South will add 85,000 persons to Windsor's 117,000 population on January 1, 1966.

**Newmarket and Toronto** utilities are making use of "Talking Points" to spread the Hydro philosophy. Newmarket includes the opinion pamphlet in its billing cycle while Toronto distributes it to its employees.

**Deep River Hydro** reports an enthusiastic response to its program to upgrade service in existing homes from 60 to 100 amps. The plan can be financed over a two-year period.

**St. Catharines' first** all-electric subdivision is under construction. Electrical supply to the 64-unit development will be underground with service connections incorporated in street light pedestals.

**North York schools** may soon be guarded by electronic watchdogs. Trustees have called tenders for the detectors, which would alert administration staff around the clock to everything from break-ins and fires to burst water mains and power failures.

**Aylmer and Markham PUCs** are planning extensive improvements to their headquarters buildings while Nipigon Hydro will move into a home of its own for the first time. Up until now the Northwestern Ontario utility has shared office space in the municipal building. The new headquarters will be located in an existing building to be renovated throughout.

**Amherstburg** is likely to join the growing list of Ontario municipalities to make underground wiring compulsory in all new commercial and residential developments. The rebate system for appliances has been suggested to town council by the PUC and there would be no charge for underground service to schools or public buildings.

**Preston PUC** is making a strong bid to ensure that the town's new municipal complex will be heated and cooled electrically. The architects are now studying the proposal.

**Brantford PUC** plans to spend about $50,000 for a new service centre site.

**Niagara Falls Hydro** is the latest to join an inter-agency committee to coordinate the expansion and improvement of municipal and private utility services.

**Fred Bridle,** former manager of Amherstburg PUC, has been named manager of the Dresden Utilities Commission. He succeeds G. D. Hines who has resigned.

**A new era** of better electrical living came to Chapleau in September when the new 55-mile transmission line from Hollingsworth Falls went into operation. Previously supplied by diesel generators and a small hydraulic plant, the area will enjoy lower rates with the new Hydro supply.

Commenting on the development, Tom Godfrey, chairman of Chapleau Hydro, said the new line could meet future demands as high as 20,000 kilowatts — "plenty of power for the people of Chapleau to Live Better Electrically and for future industrial development."

**About eighty-six portable classrooms** to be used in Metropolitan Toronto for the first time this school year may be electrically heated. A special rate of 1.5 cents gross per kilowatt-hour would be charged by the nine electrical utilities involved, subject to a 15 per cent off-peak disco Thermostats would be automatically set back to 50 degrees at the end the school day to keep the classrooms off the evening peak.

**Glen Manley,** who served with Southampton PUC for the past 15 years, been named manager of Grand Bend PUC.

**Charles W. Lamb,** 74, Progressive Conservative MP for Victoria since 19 died in hospital at Lindsay in July after a long illness. Mr. Lamb wa member of the Lindsay Hydro commission for 19 years prior to his elect to the Commons, and was Mayor of Lindsay from 1941 to 1953.

**A questionnaire** sent out by Waterloo PUC to 8,000 customers would i cate that the utility's new automatic billing process is overwhelmir acceptable. But a few pointers from the 360 replies helped improve ot services. These ranged from touching up a rather unsightly pole to a ference by some customers for outside meters. Comments included: "I living alone just now. I will leave the side door open all the time so meterman can get in anytime he comes around."

Among plaudits for the utility: "Yae're doin' a good job."

**New sub-stations** in Tilbury and Welland have been named in honor veteran Hydro officials in the two communities. W. L. "Billy" Wilson chairman of Tilbury PUC for more than half the 40 years he served on commission, while T. W. Houtby held several managerial positions du 39 years with Welland Hydro.

**The final report** by consultant M. V. Jones, who conducted a review of l government in Ottawa, Eastview and Carleton County, recommends amalgamation of the utilities in the area and the abolition of the l Hydro commissions. Under the section "Boards and Commissions", the port reads:

"With the exception of hospital and school, all existing local boards commissions should be abolished and the services and staff under t jurisdiction made the responsibility of the regional government admini tive departments. Policy decisions formerly made by the boards and missions would henceforth be formulated by council committees for a tion by Council. . . ."

Elsewhere the report reads:

"Works: The most radical recommendation we have to make in con tion with this function is that all hydro administrations, whether ele or appointed, be dissolved and the operation, including street ligh come under the Works Department. We can think of no substantial re why this action should not be taken and many good reasons wh should. . . ."

The utilities in the study area include the Gloucester and Nepean H Systems as well as Ottawa Hydro.

## Students Build Medallion Home

A Gold Medallion certificate has been awarded by Chesterville Hydro to owner-sponsor of an all-electric bungalow built by students of North Du District High School as a class project.

The house, which is among the first full-scale educational projects o kind in Ontario, was built by Grades 10 and 11 technical students, occupational students did the masonry work. Three technical shop teac



*The house the students built is all-electric.*

d the project. The owner, a district resident, provided the lot, plans
aterials.
dents displayed their craftsmanship at an open house, and another
ale project is planned when school re-opens this month. □

## Adam Recalled



*o itself stands as Sir Adam's greatest memorial.*

s to Sir Adam Beck—the "father" of Ontario Hydro and its first
an—were paid at a memorial service in Toronto last month marking
th anniversary of his death. Sponsored by the Toronto Electric Com-
ners, the wreath-laying ceremony at the Beck monument on University
e was attended by more than 70 persons.
McMechan, chairman of Toronto Hydro, described Sir Adam as "a
in his generation . . . outstanding among the so-called visionaries
presaw the vital role which public power would play in developing
". A wise people build monuments to their leaders, he said, to serve
bols for future generations, but Hydro itself represents Sir Adam's
st memorial.
resenting the Ontario Government, Labor Minister H. Leslie Rowntree
d that the extension of Hydro service to remote areas of the prov-
as in the finest tradition of the early public power advocates.
R. H. Hay, Kingston, president of the Ontario Municipal Electric
ation, stressed the uniqueness of the Hydro enterprise and said that
ration between the 359 member utilities who buy power at cost
ntario Hydro was the key to its success.
ng "the tendency in various places to alter the structure of this
cation," Dr. Hay suggested looking back to the ideals of Beck in ad-
g public ownership of an essential, natural monopoly.
owing a brief commemoration service conducted by the Bishop of
, the Right Rev. F. H. Wilkinson, wreaths were laid at the base of
nument by Mr. Rowntree, W. Ross Strike, chairman of Ontario Hydro;
y and Toronto Mayor P. G. Givens on behalf of Toronto Hydro and
.
vn from the left in the photograph are Mayor Givens, Dr. Hay, Mr.
and Mr. Rowntree. □

## se Fines for Line Damage

verything else, the cost of using power line insulators for target
e is going up. Sharpshooters face stiffer penalties for the offence
a 1965 amendment to the Public Utilities Act which raises the maxi-
ne from $20 to $300. Convicted persons are also liable for all dam-
ising from their irresponsible trigger work. □

## rt Term Securities

Hydro entered the short-term securities market for the first time,
offering interest-bearing notes with maturities of one month to three years. This new method of financing will provide Hydro with additional flexibility in arranging its future financial requirements for authorized capital construction programs.

It is expected Ontario Hydro will raise approximately $50,000,000.00 during 1965 through the sale of these notes and that additional funds will be raised in future years. Interest rates on the notes will vary with market conditions and between periods to maturity.

These short term securities are available in units of $100,000 and multiples thereof. Purchasers of the notes will be mainly corporations having temporary funds available for investment.

## Hydro Presents Painting

An oil painting of the newly-launched coal carrier "Ontario Power" was presented to the City of Sydney, N.S., last month by Ontario Hydro's general manager J. Mervyn Hambley. The "Ontario Power" carries coal from Sydney to Hydro's coal-burning stations on Lake Ontario.

In presenting the painting to Senior Alderman Ross Bolton, Mr. Hambley declared: "We hope it will serve as a reminder of the warm ties of friendship that exist between our two provinces." □

## Fuel Oil Pipeline

North York Board of Control has recommended approval of an underground pipeline system to distribute fuel oil in a new subdivision.

The project involves distribution of domestic fuel oil to 80 per cent of the 280 houses in the subdivision.

In addition to the pilot project, the township will request Metropolitan Toronto to seek legislation that would permit municipalities to regulate installation of other pipelines throughout the township.

The project, to be undertaken by Public Fuel Transmission Systems Ltd., will be the second underground oil supply system in Metro. The first complete self-contained community oil system is under construction.

Reeve James Service said the pilot project would give township officials an opportunity to see how underground pipelines would operate. Individual home owners have the option of having their own oil tank installed. □

## Electric Coal Bins

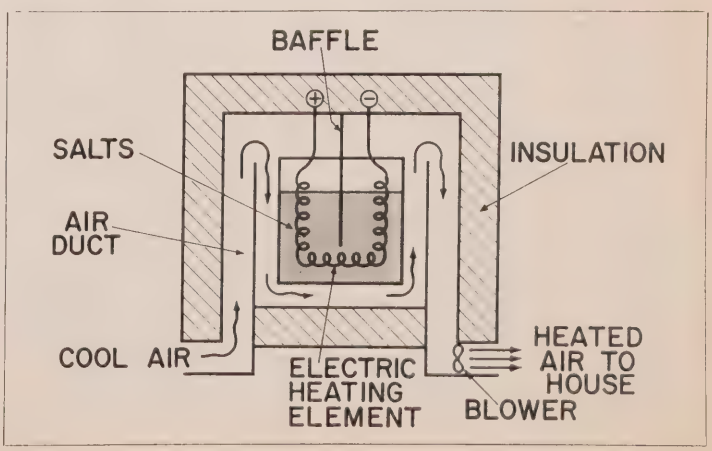
Therm-Bank, or an "electric coal bin", a new device capable of storing heat until needed, has been installed in 11 homes of Philadelphia Electric Company employees on an experimental basis.

Heat for the storage unit is produced by resistance heaters similar to those used in an electric range. Philadelphia Electric engineers hope these units, operating on off-peak power, will improve the competitive position of electric heating in their residential market.

Approximately the size of a four-foot cube, the units can be used as the sole source of heat, as in one home, or in conjunction with a heat pump to give year-around comfort, as in the other installations.

The medium actually storing the heat is a special combination of salts in which the electric element is immersed. When fully charged, the material is heated to 900 degrees F., but the outside of the insulated unit is only slightly warm. Circulating air withdraws heat from the salts as needed.

The units are designed to deliver 30,000 btu per hour of heat to supplement the output of the heat pump and have a total heat storage capacity of 400,000 btu. If called upon to supply maximum heat constantly, the charge



would last from 10 to 12 hours. With no demands, the insulation of the unit is such that the charge could last for a month or more.

Philadelphia Electric has been associated with the development of Therm Bank since initial research was undertaken by the Edison Electric Institute in 1957. The prototype was designed by Comstock and Wescott and General Electric supplied the test units.

A preliminary report on the test installation is expected this fall. □

## Waltzing Through Washday

Encouraged by the success of last spring's dishwasher promotion program in Ontario, a nation-wide laundry promotion will be launched by the Canadian Appliance Manufacturers Association this fall. Ontario Hydro and utilities in the province took an active part in the "Lifetime Holiday From Dishes" promotion, which some manufacturers credit with increasing sales as much as 40 per cent in one month.

Utilities, financial institutions and suppliers of steel, soap and textiles have been invited to take part in the fall program, which is titled "Waltz Through Washday." The October-November period for the promotion is considered the best for selling laundry equipment and there is also some benefit from simultaneous advertising on the same theme in the U.S.A.

Ontario will be one of five administration sections for the purpose of the promotion. □

## Tallest in Chicago

The 100-storey Hancock Building now under construction in Chicago will be all-electric. Tallest building in the city, it will feature a million square feet of office space on 34 floors and zone-controlled heating in 750 apartments on 49 floors. Air conditioning system will be rated at 6,500 tons. Electrical demand is estimated at between 26-28 thousand kilowatts.

## "Home of the Year" is Electrical

The penthouse look has come to Nepean Township, outside Ottawa, where Canadian Homes Magazine has erected its "Home of the Year" for 1965. This two-storey, white speckled brick home was designed with the major living area on the second floor. This enables the family to take advantage of a raised, private outdoor space, which includes open decks on three sides and a screened-in porch with a fireplace to provide heat for the family during the spring and fall months.

The upper storey of this Gold Medallion home includes a kitchen, dining room, living room with a fireplace, family room, bathroom and a master bedroom which is separate from the rest of the living area. A combination play-room, and recreation room is located along with a study on the first floor. Also included on this level are two bedrooms, a bathroom and the main entrance.

Aside from its "upside-down" design, the handsome "Home of the Year" is equally outstanding for its electrical features, including a 400 ampere service. The house is heated by a central electric system, with supplementary duct heaters in the recreation room area. Humidity controls and electronic air cleaner control are mounted on a central panel in the recreation area. An intercom control is also mounted on this panel. Upstairs, a speaker system is located in the kitchen, allowing the housewife to answer the front and rear doors.

One of the home's innovations, particularly intriguing to the housewife, is a built-in central vacuum cleaning system, which does away with dragging a tank or cannister from room-to-room. Wall inlets are positioned strategically throughout the house, with vinyl tubing running from the inlets to a cen receptacle in the basement.

When the housewife wishes to clean, she simply lifts the inlet co which automatically turns the unit on, and plugs in a light-weight hose. cleaning device is just being introduced to Canada, but has been succ fully used for a number of years in the United States.

The architect for this exciting home is Matthew Stankiewicz, co-desig of the Canadian government's federal pavilion at Expo '67, and the bui is Minto Construction Company Limited.



*Upside-down house features electrical equipment.*

## Million Dollar Cheques



*New Hydro systems pay up.*

Million-dollar cheque-passing ceremonies officially marked the inaugur of two new Hydro utilities in July. Representing the purchase price Ontario Hydro for the electrical distribution systems in the township Widdifield and Gloucester, the payments were presented to Hydro offi by members of the newly-formed commissions.

Top: A. B. Hayman, third from left, manager of Hydro's Northea Region, receives $1,000,000 bank draft, on account, from Reeve Don chairman of Widdifield Hydro. Other Widdifield officials, from left: Williams, manager; Kevin Ryan and Jack Chapman, commissioners; Stewart, secretary-treasurer.

Below: Hydro Chairman W. Ross Strike, left, accepts $1,600,000 ch from Gloucester Hydro. Others, from left, are: Arthur Paisien and R Earl Armstrong, commissioners; Deputy Reeve Keenan; Paul Tardiff, Mi Russell; Arthur Bowker, chairman of Gloucester Hydro.

## June-July Energy Production

Primary energy provided by Ontario Hydro in June totalled 3.3 billion kilowatt-hours, an increase of 5.4 per cent over the sam month a year ago. The July total was 3.30 billion — a 4.6 pe cent increase over July, 1964.

For the first 7 months of 1965, the total is 24.86 billion kilo watt-hours, up 6.1 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand i June was 3.59 billion kilowatt-hours, 2.2 per cent more than th previous month. The figure for July was 3.55 billion — 1 per cen less than June.

The seasonally adjusted total for June represents 43.06 billio kilowatt-hours at annual rates. This is 309.6 per cent of the energ demand in 1949. The adjusted total for July was 42.59 billion – 306.2 per cent of the energy demand in 1949. □

# off the wires

Waste not want not is our motto and as we some juicy beetle tidbits left over from last th's account of Dutch elm disease we'll add t of sugar coating and get rid of them here. hing like sugar-coated beetles to stimulate a d literary appetite.

irst, lets consider the vector (disease carrier he uninformed). Right away we get down to beetles and there are two species, one Euron and the other a native. A good team, the igner likes tender saplings and branch ends e the home grown variety favors the rougher k of older trees — a real cool combo our elm s can't dig.

s beetle fans will testify, the overseas variety nore aggressive and tends to take over when two come together. Their slightly different cycles tend to complicate control measures something big city police forces will go along .

nd did you know natural root grafting often es place where elms are in close proximity each other? This is the only way the Dutch fungus can be transmitted other than by tle.

Ve might add a word about their eating and eding habits. All we know is that the bark tles won't use elms dead for more than one r for either.

inally, don't get the idea there are only five tles. Man, no. As many as 2,400 have been nted in the larvae stage in a square foot of bark. Guess those crazy bugs really dug that .

Pun of the month goes to the Windsor Star. item outlining the planning involved in assursufficient power for the future ends up with sentence.

'Hydro does not plan to be caught with its nts down."

Poised as we are on the threshold of the mic age, it is gratifying to know that our ntists at Chalk River, Whiteshell and elsere are among the world's leaders in various ses of nuclear research and development.

till and all, the whole business is fundamentsimple, or so it seemed to us after breezing ugh the recent annual report of Atomic Enerof Canada Limited.

Consider the work being carried out, for exple, with the triple axis neutron diffraction ctrometer. As we fully expected, this little get was used to examine the characteristic itation spectrum of liquid helium and to keep lose eye on the concentrations of free elecns in certain alloys of niobium and molybum. It was also used, naturally enough, to e the inelastic scattering of neutrons from gnetic materials.

What else have these fellows been up to? l, for one thing, they have been using an tronic microscope to watch the irradiation at K of thin films of germanium and silicon. Not so different from bird watching, we suspect, if a bit more scientific.

Leafing on, we came to a section explaining how uranium carbide had been irradiated to 800-megawatt-days per tonne with a central temperature in excess of 110° C. Pretty hot, all right, but as the report implies, a simpleton might have anticipated the results.

"As expected", it said, "there was less cracking and deformation compared with uranium dioxide, but an interesting form of uranium migration was seen at pellet interfaces."

Cleverly couched, of course, but the word "migration" gives them away. They're still talking about birds.

And don't get the idea we are deliberately searching out simple samples of nuclear research. Aside from the nuclear ABCs already mentioned, the boys at Atomic Energy have been working on the creep of materials under irradiation, differences in ductility between Zicaloy-2 and zirconium-niobium in terms of crystallographic textures and, last but by no means least, the kinetics of ammonia decomposition due to radiolytic reactions in water.

Let's see now — how did we make the rotten egg smell back in the Class of '48.

■ A rather lengthy report of a birthday party in The Sault Daily Star caught our eye recently as it was about Bob Beck, an 80-year-old, banjo-strumming youngster of nearby Searchmont who seems to owe his longevity to variety. Among the highlights of a career which encompassed, mining, lumbering, millwork and farming was the trapping of "more than a hundred wolves." His banjo was faced with one of their hides.

Buried deep in the report was a reference to a cousin who was knighted by Queen Victoria.

"He couldn't tell us just why this honor was bestowed", the item related, "but Sir Adam Beck was born at Baden, Ontario, and educated at Galt Grammar School."

Cousin Bob may be a bit weak on family ties but no one can accuse him of basking in the reflected glory of his illustrious relative. Let's hope he's in shape to visit the Hall of Memory being assembled in honor of Hydro's pioneers at Niagara Falls for the Centennial.

■ We were impressed by a recent editorial in the Elmira Signet concerning the imminent closing of the Ontario Hydro area office in that community. In the great majority of cases, we fear, an event such as this would have been greeted with outraged cries based solely on selfish motives. Deprived merchants and depressed real estate is the usual howl raised in these instances with all kinds of specious arguments advanced as to why the move is the height of madness.

Payrolls were ignored in the Elmira editorial and the paper decried, of all things, the loss of people — good citizens. It said:

"A great many of the staff of the Hydro here are linked closely with community life and their transfer will leave vacancies which will be difficult to fill. Coming at a time when it is getting more and more difficult to get volunteers to assist with youth work, the move could set many organizations back in their future plans.

. . . "It is doubtful whether any place of employment in Elmira has as high a rate of staff actively participating in community work as Ontario Hydro. . . . It is difficult to replace residents of this calibre who are ready to accept their share of community work."

The Signet is to be congratulated for its insight and the Hydro folk can take a bow for being missed. Good citizenship will never be out of style and it will fit right in with Hydro's new look.

■ Animal antics are again in the news and Widdifield Hydro is getting its knocks early from the furry folk. Eager beavers dining on a good size tree caused it to topple across a distribution line resulting in a power interruption to customers of the newly formed utility.

In London, Ontario, trouser repairs are getting out of hand and the PUC is having trouble gaining the blessing of the humane society for the measures being taken to reduce tailor bills and preserve meter readers. According to the London Free Press, these intrepid fellows were issued with pressurized spray cans to ward off belligerent canines which were feasting on PUC employees at the rate of a dozen a month.

A Humane Society official thought it would be preferable for the utility to withdraw its service rather than encourage its employees to take any direct action against a dog. In any event, spray cans, like guns, should be pointed in the right direction for best results. One London meter reader forgot this basic rule and he can testify that the repellent is pretty harmless. Spraying himself in the face accidentally, he reported only a "burning sensation".

And from a way down east in Newfoundland comes a Canadian Press item of passing interest. It reports hundreds of spectators watching with awe as a lineman rescued a small red squirrel from the top of a utility pole.

Reason for the commotion, according to CP, was that it was the first squirrel ever seen on Newfoundland out of captivity. Although native to Labrador, they have never inhabited the island.

Perhaps the wee critter was worn out by his swim but it doesn't bode well for survival of the species. Ontario type squirrels need no assistance in the matter of pole navigation. □

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# ontario hydro news

## october/1965

## the temple of high voltage research

## steam era revisited

## commissioners in conference

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**Casey Jones Returns.** The days of Canadian steam-operated locomotiv ceased in 1960 when a die-hard engine chugged to a halt after its fi regular run in the Winnipeg area.

But in Ontario, a society was formed to keep the traditions of the iron horse alive. The mournful wail of the warning whistle, the clouds sooty smoke and clinkers, the out-of-breath puff puffing as the train pulls of the station . . . these sights and sounds have all been preserved by t Upper Canada Railway Society, an 800 member organization which off five steam excursions a year to an appreciative public.

"Our first trip was held in July, 1960, and was a day's outing fr Toronto to Niagara Falls," says Stuart Westland, Burlington, president of society. Since then, the excursion train, pulled by the 22-year-old 6218 ste locomotive on loan from Canadian National Railways, has toted nearly 2,( passengers a year to such places as Fort Erie, St. Thomas, London, Stratfo Hamilton, Guelph, Barrie, Haliburton, Lindsay, Kingston and Picton.

An average all-day trip includes transportation (some prefer to tra standing in the baggage car) and usually a stop-over at some point interest. Recently old 6218, weighing 300 tons, flashed her huge dr wheels along the tracks to the Highlands of Haliburton to let her 600 p sengers not only enjoy the ride, but the blazing reds and gold of the autu hills as well.

For another aspect of the steam era, turn to page 4.

# accent on knowledge

by PAUL CHISHOLM

**Learning is a continuing process for Hydro people who must keep abreast of the latest developments in management, marketing and technology**

What do a frogman and a lawyer, a typist and a forester have in common? Could be their Hydro paycheck because these and hundreds of other skills and professions are required to keep Ontario's huge public power enterprise operating at peak efficiency.

Improving and updating these talents through formal learning and advanced training programs is a continuing process at Hydro. And at no time has the importance of this policy been more evident than in meeting today's sweeping changes in technology and work methods.

"The shift in skill is upwards," declares Ray Whitney, manager of Hydro's Manpower Services Department. "In other words, more knowledge is being demanded of employees. Automation and a variety of other labor-saving devices are gradually taking over many of the routine chores, leaving more people free to use their brainpower.

"And this means that education, whether obtained before joining Hydro, on the job, or through special retraining and refresher courses, is becoming increasingly important. There is a trend, too, for technicians to gradually assume more responsibility so that engineers can carry out more advanced work."

To make the most effective use of its staff, Hydro keeps the learning process rolling in such diversified fields as forestry and line work, supervisory and managerial techniques, marketing and sales, data processing, accounting, administration, personnel work and public relations. Some courses are held at Hydro's Conference and Development Centre at Niagara Falls and others at various locations throughout the province.

Municipal utility personnel frequently participate in these sessions and take part in their planning. The utilities also have their own specialized training and education projects as well as technical workshops. These are usually conducted through the various associations to which utilities or their members belong, but larger utilities frequently augment this learning with their own programs.

Trade training has always been an important facet of Hydro operations. From the outset, linemen, maintenance crews and plant operators have been taught the skills of their respective jobs after joining the Commission.

While trade training is still important and a number of different occupations are taught through apprenticeship programs which conform to provincial standards, increasing emphasis is placed on upgrading skills. For instance, new techniques for cable splicing, use of aerial baskets and bare hand live line maintenance mean employees have to hike back to the classrooms where new knowledge is sifted and strengthened by practical instruction.

Another example is a recently-concluded 27-month course for some of the men who operate Hydro's generating and transformer stations. Lessons, which were mailed to some 500 participants at locations throughout the province, include algebra, geometry and trigonometry, principles of electricity, hydraulic theory, outage scheduling, system operations and complex operating procedures.

The course, which concluded with written examinations, was designed to assist operators to cope with new conditions, and to foster a more fundamental understanding of equipment, electrical theory and operating procedures, states W. A. Polson, operating engineer. Also, the course further equips operators, many of whom have been out of school for some time, for possible promotion.

While technological change sweeps away tried and tested work methods and revolutionizes a host of jobs which previously were tedious toil, professional staff are no less affected. In fact, obsolescence of knowledge is a real problem to the vast majority of scientists and engineers throughout the world. And while the responsibility for keeping up to date still rests with the individual, a mark of the professional person, assistance can be provided.

Hydro engineers, for instance, attend refresher and updating courses at universities and schools of engineering. They also participate in national and international conferences and some have taken a correspondence course compiled by Hydro as the initial step in a developing program to help them keep up with the times.

Recent engineering graduates find their right niche in Hydro through an engineer-in-training plan in which they are given rotational work

assignments lasting several months in various departments.

Supervisory and management staffs are also hard-pressed to keep abreast of the latest thinking in their fields. Numerous training sessions and seminars which involve everyone in the management group to the level of assistant general manager are now held on a continuing basis. In addition, members of this group periodically go back to their textbooks at special schools sponsored by the universities.

Hydro provides financial assistance to employees who can advance their qualifications with outside courses. These are usually regular or extension courses at a university, or classes at high or technical schools.

In order to further cope with its expanding educational and training needs, Hydro recently announced plans for a new Conference and Development Centre in Mono Township, some 50 miles northeast of Toronto. The new staff training facility will replace the one at Niagara Falls which has operated for the past 12 years and is now inadequate.

The new centre, to be located on a 196-acre site and expected to be under construction late next year, will centralize Hydro staff training.

Another good example of Hydro's determination to keep up with fast-evolving technological changes is the nuclear training centre now nearing completion adjacent to the Nuclear Power Demonstration plant (NPD) at Rolphton. The $225,000 building, which includes five laboratories, four lecture halls and other facilities, replaces temporary accommodation. It will not only help ensure an adequate number of skilled employees for Hydro's nuclear-power stations but it will also help qualify young trainees from overseas countries which have bought Canadian reactors.

As exemplified by these new facilities Hydro and the municipal electrical utilities of the province are well aware of the need for advanced education and training. In the Hydro business, learning never ceases. □





## on the marketing front

A far-reaching marketing training program for Hydro and utility employees and management began this fall with a series of seminars, workshops and conferences which will continue through to mid-1967. More than 1,000 "students" will participate in the three-part program which will concentrate on training in marketing management, sales, and customer relations.

"Program content is based on training needs assessed in an extensive survey which included interviews with 40 municipal utilities and 58

*Hydro classrooms are the great outdoors as well as more formal facilities. Drivers and foremen, top, learn how to navigate in muskeg. Hydro group, right, is brushing up on latest marketing techniques.*







Hydro offices as well as studies of the results of previous marketing training programs," states R. Hugh Pemberton, manager of Hydro's Marketing Training Services Department. "In some cases, outside authorities in the three fields of activity will augment Hydro and utility representatives in conducting the sessions, the first of which got underway in Toronto last month."

Sessions will also be held at other locations throughout the province. Case history studies and exchanges of ideas will be included.

The general and specific aspects of marketing will be examined at the various marketing management sessions, according to co-ordinator Mort Ciglen. Human relations and communications and their particular application to utility marketing will be featured this fall and winter.

Objective of these sessions is to assist marketing management to fully develop staff potential. Another goal is to interpret and encourage implementation of marketing management principles, policies and procedures among electrical utilities.

The sales training series will be attended by field sales contact personnel. Working with consulting engineers will be one of the topics studied at the workshop this month.

A farm sales workshop next month will emphasize hydro requirements and applications on the farm, and will include public speaking guidance.

"Public speaking development is essential to equip sales personnel who are frequently called upon to address farmers' organizations and trade groups," declares co-ordinator John McArthur.

Sales psychology, the use of advertising in selling and the art of written communication will be further studied at seminars early next year and a new self-training program in "selling" will also be introduced at these sessions.

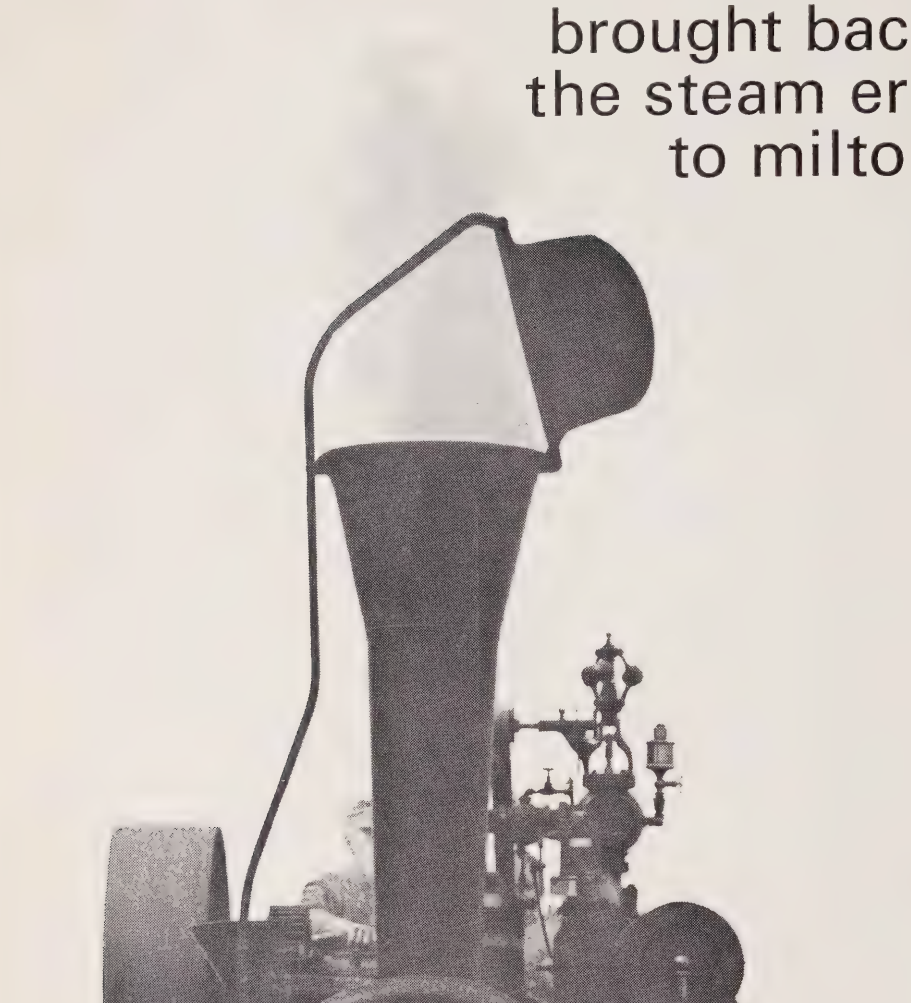
To involve all regional, area, and utility employees in expanding and protecting Hydro business, the customer relations leader training program has been accelerated. Leaders selected by management from among supervisory or other influential staff members will attend sessions on the fundamentals of group discussion techniques, plus general knowledge of Hydro operations.

On returning to their locations the leaders will guide monthly one-hour discussions by groups of six to 10 employees.

Aubrey Lewis-Watts, customer relations training co-ordinator, states that the objectives of the program are to encourage and help all employees to demonstrate personal interest in customers and their problems; to seek better ways of serving customers; to answer basic customer questions and know where to get answers to technical customer questions; and to encourage employees to use electrical appliances and to advise customers on their features and advantages. □

*Job safety, a vital aspect of education, is stressed, centre photo, by Moe Sheppherd, Electrical Utilities Safety Association. He is shown with Scarborough PUC line crew. Ontario Hydro foresters, left, learn chainsaw handling procedures.*

# fifty years were stripped away when they brought back the steam era to milton




# FLYWHEELS and FIREBOXES

Flying chaff and the steady chuff-chuff-chuff c well lubricated steam engines were all part o the scene at harvest time half a century ago – but who can remember that far back? Some d and they staged a pretty dramatic refreshe course for more than 35,000 others wh attended the Steam-Era at Milton over th Labor Day weekend.

Anyone passing within a country mile of th fair grounds knew something was up. Headin the list of unorthodox sound makers was gigantic steam organ whose popping valve rendered everything from Oh! Susannah t My Old Kentucky Home — with apologies t Stephen Foster for any resemblance to th original compositions. Add the single-not voices of half a hundred assorted steam engines to the slap of canvas belts on polishe steel power wheels and you have some of th sounds associated with a steam buff gathering

Nor is the nose neglected. Sooty black coa smoke belching from five-foot stacks mingle with the more fragrant effluence of wood burning fireboxes to delight the enthusiast nostrils. His eyes can drink their fill of polishe brasswork, the gleaming steel of pumpin pistons and the gaudy greens and reds c refurbished boilers.

What's it all about? Sponsored by th Ontario Steam and Antique Preservation As sociation, the Milton meeting marked the fift annual reunion put on by the group. All that in it for the exhibitors is a chance to show o their fire-breathing pachyderms and swa steam talk with fellow addicts.

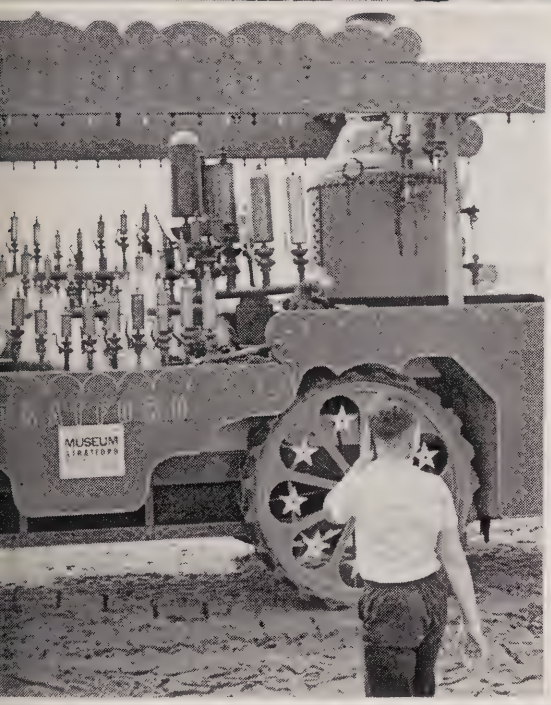
And it's catching on from the spectato standpoint. Only about 7,000 dedicated soul were on hand to witness the association's initia endeavor in 1961 but their ranks have swelle each year as the performance improved.

Steam-Era is far more than a static collec tion of resurrected relics. Star of the show b appearance and number was the traction en gine — the combination power plant and plo horse of the early 1900s. Tended for the mo part by leather-faced oldsters in coveral and long-billed engineer's caps, the mechanic monsters delighted the crowd with their awk ward antics.

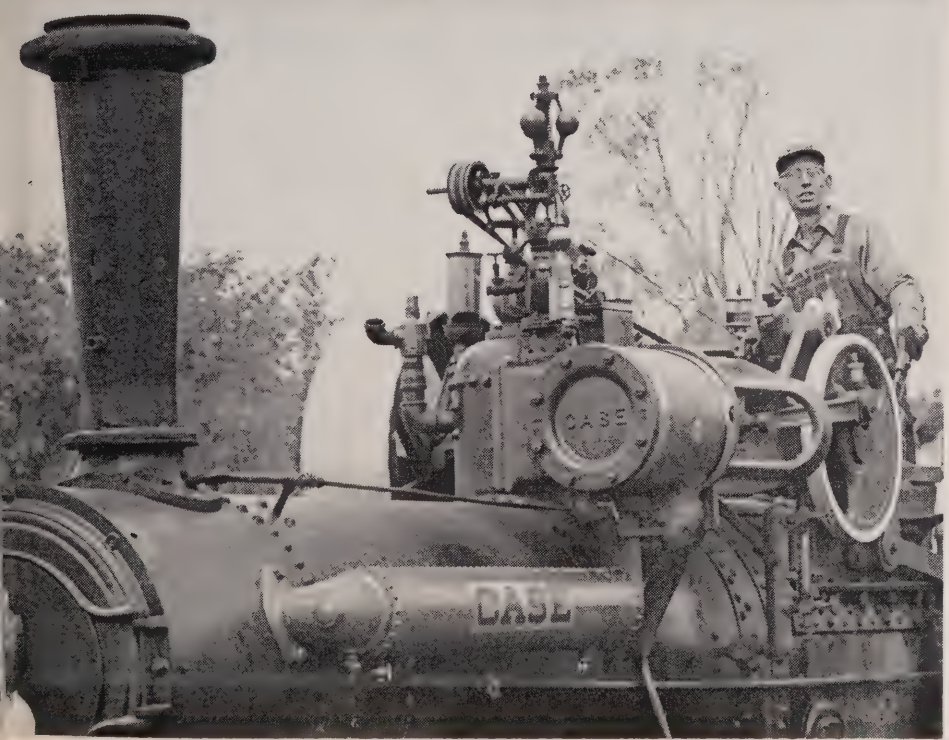
Load pulling contests and slow motion race were included in their repertoire while th more serious-minded could watch them at th tasks they were designed to perform. Powe take-off belts connected the big engines to saw mills, threshing machines and even a shing mill. The latter, vintage 1858, derived its powe from a steam tractor built by the Waterlo Manufacturing Company in 1898. Those i attendance could still turn out a pretty fa shingle.

Kerosene-burning "oil pull" tractors, whic followed steam in the mechanical evolutio down on the farm, were also much in evidenc as were a battery of small stationary engine used for pumping water and other farm chore These were among the first gasoline engine and they made their presence known by inte










mittent barking as they fired every eight or ten revolutions of the flywheel.

A long shed was devoted to steam models—those incredible scale reproductions whose miniscule dials, gauges and valves would make a Swiss watch factory look like a boiler works. Rounding out the reunion were an authentic general store, model railway engines, giant steam rollers and a smattering of vintage automobiles.

Why will a man spend most of his spare time and a good part of his pocket money restoring relics others would as soon let rust into oblivion? We asked Ross Johnson, operating chief at Ontario Hydro's Lakeview thermal-electric station. Among his most precious possessions is a 35-ton steam shovel — a highlight of the Steam-Era display. He said:

"Call it nostalgia if you will, or just plain foolishness, but there is something about the steam era which has not been transmitted to the quiet and super-efficient age of electricity and diesel."

Pointing with pride to the coal-burning steam shovel, restored to its original glory by himself and a dedicated group of Lakeview operating personnel, Ross groped for an explanation:

"We had to beg, borrow and steal parts from North Bay to Windsor and Ottawa. Our group spent hundreds of hours installing the parts, rebuilding the boiler and restoring the woodwork. We got a tremendous sense of achievement from working together and ending up with a creation certified by government inspectors as ready to go."

But we suspect Ross comes closer to the truth when he says:

"These engines get to you. With their ponderous flywheels, spinning flyball governors and sluffing pistons, a man can watch them for hours. Add the gamut of wails, grunts, hisses and moans from their joints and aperatures and you have something that's very much alive." □

*These fire-breathing pachyderms delighted 35,000 at Milton Steam-Era. Cumbersome traction engines are shown top and bottom with a calliope and steam shovel, centre. Hydro's Ross Johnson is at controls of "very much alive" shovel.*

**Brush control demonstrations drew utility representatives from across the United States**

# they came to watch our spray

When it comes to keeping power line rights-of-way in tip-top condition, Hydro is in a class by itself as utility representatives from Maine to Louisiana and Oregon will testify. They recently attended a two-day clinic at which Hydro foresters demonstrated the ground and aerial spraying techniques they employ in the world's largest brush control program.

Woody growth along power lines prevents access for maintenance and will eventually interfere with the conductors.

Comprising nearly 100 visitors, the United States group included brush control experts from more than 60 utilities and representatives of the Dow Chemical Company which wa co-host of the clinic with Ontario Hydro. Dele gates from several Canadian provinces wer also on hand to examine methods and equip ment.

The sessions opened with a tour of Hydro extensive research facilities and a panel dis cussion led by Chief Forester Jack Winte The group was officially welcomed by R. H Hillery, Director of Operations, who hoped th clinic would serve as a forum for the exchang of information useful to all participants. H stressed the need for careful training in spray ing methods and emphasized the forester's ro in maintaining good public relations.

On the following day the group watche field demonstrations of equipment and tech

*Brush control experts from more than 60 United States utilities watch Ontario Hydro specialist spray pelletized herbicide. The portable mist blower eliminates wastage in spot treatment.*



es, some of them originated by Hydro. Markham, east of Toronto, they saw opters spraying a transmission line with r and thickened water, simulating Hydro ing operations in remote parts of North- Ontario. A balloon wind indicator develop- y Hydro researchers was also in use.

Jack Winter explained, only about 10 per of Hydro spraying is carried out from the ut the helicopter is an invaluable asset, cularly in remote, difficult-to-reach areas. kened sprays, he said, developed by the mission, greatly increased the effective- of air spraying by reducing drift. Under conditions, a helicopter can spray up to iles a day.

e visitors also saw demonstrations of ble mist blowers spraying pelletized herbicide for selective brush control.

"Once we get an area under control", the chief forester explained, "our main concern is spot treatment. The economical spot control sprayer that fits on a man's back lets him get at a certain area without a great deal of waste spraying."

The group was told that Hydro's brush control operations involved some 60,000 miles of transmission and distribution line — enough to stretch twice around the world with some left over. Almost 59,000 acres were sprayed in 1964 by all methods.

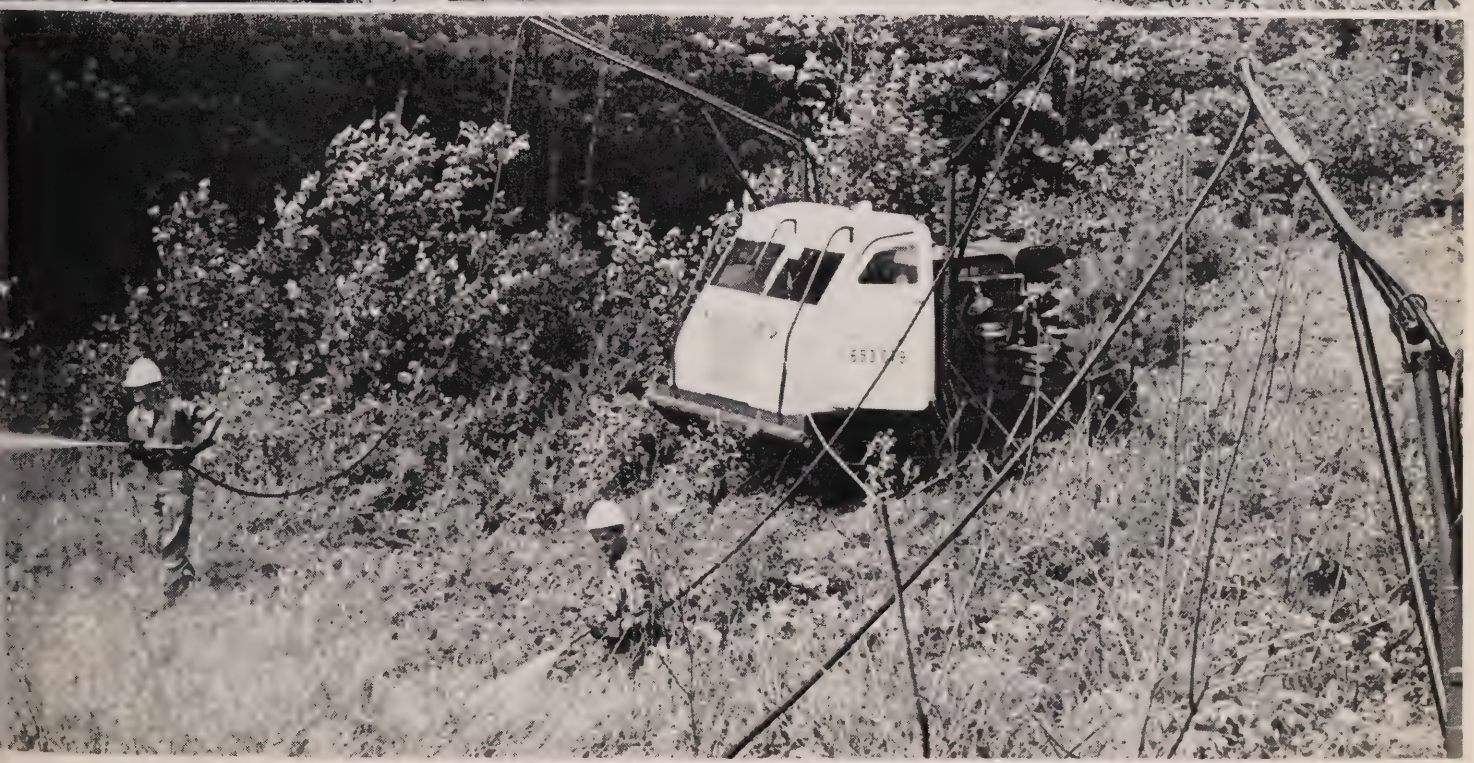
A properly controlled right-of-way, it was pointed out, consisted of a thick lush carpet of grasses and low-growing plants which, in addition to facilitating line maintenance, could serve as a break in the event of a forest fire.

The United States visitors and their Canadian counterparts ended their tour at Actinolite, north of Belleville, where they saw heavy vehicles in action. These included muskeg tractors and articulated-wheeled vehicles fitted out with automatic hose reels and booms for off-the-road spraying. They also witnessed applications of herbicide with automatic or fixed spray nozzles and hydraulic booms — both adopted recently to meet Hydro's changing requirements in right-of-way maintenance. □

*Left: mist blower is adjusted on forester's back. Articulated boom extending from truck is used for roadside spraying, while muskeg tractor's tanks feed sprayers on right-of-way.*





within its windowless walls time is measured in microseconds

# the tin temple

by LES DOBSON

High-voltage is hot news.

Half a million volts will flow down a 230-mile stretch of Ontario Hydro's extra-high-voltage line from the remote James Bay region early in 1966. . . . Hydro-Quebec's giant Manicouagan-Outardes development will transmit power at 735,000 volts. . . . Talk is of still higher voltages along lines tapping distant hydro-electric sites.

Exciting changes are taking place in electrical thinking, too.

Confined to a backwater for nearly 70 years, direct current transmission has been rejuvenated a lusty and controversial infant, commanding attention with half a dozen full-scale applications in service or underway in various parts of the world.

But most extra-high-voltage techniques, AC and DC, are still in a period of trial and transition. Problems of power losses and radio interference through corona — ionization of air visible at night as a luminous glow — and the stresses imposed by massive charges on electrical hardware call for elaborate and costly research.

Ontario Hydro puts its own high voltage equipment to the test in a new metal-clad, box-like building behind the W. P. Dobson Research Laboratory in Toronto.

Completed only recently, the laboratory is known to Hydro's research people as the "Tin Temple". Doubtless the Vikings would have dedicated it to their god of thunder, Thor, for here the backroom boys unleash fierce electrical forces of a million volts and more in intensity.

It's a squared-off world of protective steel fences, heavy steel and copper shielding, of soundproofed and windowless walls — a 90ft. x 50ft. x 50ft. enclave that cost Ontario Hydro approximately $500,000.

Here is the spectacular of electrical research, bordering almost on science fiction: transformers hum as voltages are raised in the darkened test area, the glow of corona surrounds electrical leads. Fluorescent lights, although switched off, begin to gleam as the electrical potential builds up.

Technicians wear earmuffs to spare them the ear-splitting, 110-decibel crash that comes with a man-made bolt of lightning.

Says Gerald Fitzgerald, one of the temple's high priests and head of electrical testing for Ontario Hydro: "Bits fly around like shrapnel when an insulator breaks down. That's why the observation gallery here is surrounded by reinforced glass."

Even time takes on new meaning and seconds seem like aeons when it comes to measuring the electrical surge across a suspect lightning arrester. Time in the Tin Temple is reckoned in microseconds (millionth parts of a second).

Surges across line hardware are registered electronically and photographed, the rise and fall of the electrical charge showing as a black line on negative film. Faulty equipment is easily identified by the pattern of the surge.

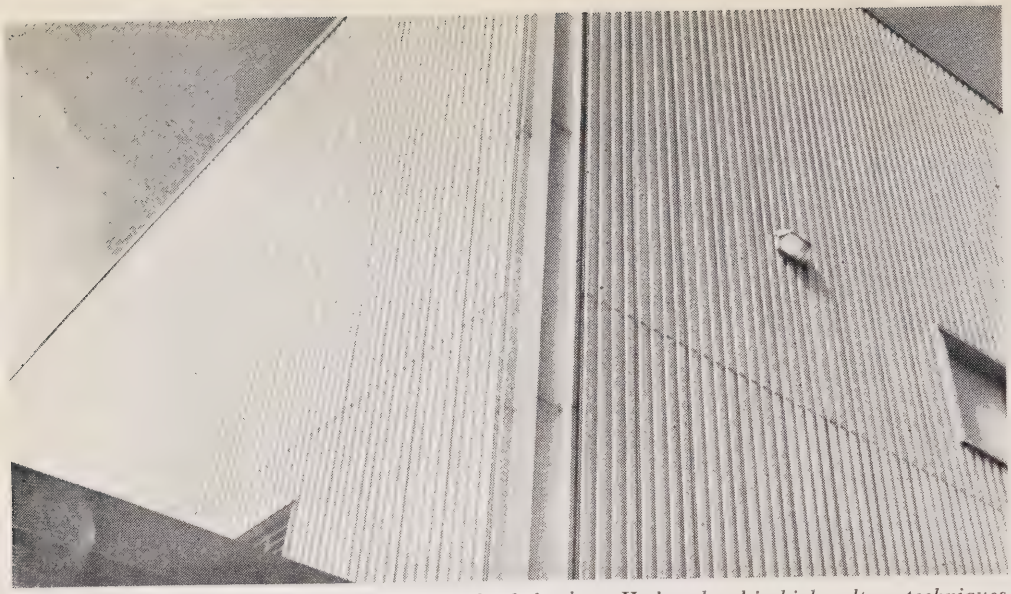
Electrical discharges up to 1,500,000 volts are produced by an impulse generator designed and built by Hydro engineers and technicians. It is used in the investigation of high-voltage phenomena, to determine protection levels for various types of equipment and to check transformer lightning arresters.

Problems associated with high-voltage alternating current are studied with the aid of a 350,000-volt transformer, one of three used by research teams at Coldwater, near Orillia, as a preliminary to the building of the 500,000-volt EHV line. The second Coldwater transformer is expected to be installed at the laboratory soon and the third by next year. Together, they will give a total AC voltage of 1,050,000.

The impulse generator and transformers are operated from separate control rooms, each well-shielded and grounded independently of the test area. Sheer physical size presents no great difficulty to testing — equipment weigh-

*This sizzling 300,000 volt spa leaps 18 inches between copp rods in Hydro's high-volta testing and research laborato*





*The "Tin Temple" helps keep Hydro ahead in high voltage techniques.*

ing up to 100 tons can be wheeled through sliding doors into the test area.

Throughout the short history of electricity, Ontario Hydro has remained in the forefront of the high-voltage stakes. The Commission built North America's first 115,000-volt line between Niagara Falls and Dundas in 1910 and delved into 230,000-volt transmission at an early stage. The 440-mile EHV line is one of the first 500,000-volt lines on this continent.

Technology in all fields is gathering momentum and one is wary of guessing what the future may hold. Lines carrying power at 1,000,000 volts or more? Transmission through the atmosphere, dispensing with the need for costly powerlines?

Only tireless and diligent research will provide the answers. □

## a word about dc

With an increasing need to transmit huge blocks of power over very long distances several countries are showing renewed interest in the use of direct current at high voltages. Why?

It's strictly a matter of cost. As a rough rule of thumb, DC transmission is being considered where the power to be moved is 1,000,000 kilowatts or more and the distance is in excess of 400 miles. It may also be economical at distances as short as 20 miles where costly underground or submarine cable is involved.

In a nutshell, both AC and DC systems involve a line with terminal stations at both ends. Because DC power must be converted from AC at one end of the line and back to AC at the other, these terminal stations are much more expensive on a DC system. On the other hand, the lines themselves are always cheaper on a DC system because fewer conductors are involved.

Obviously, the longer the line, the more significant line costs become. Other factors favoring DC include lower line losses and technical advantages where system interconnections are concerned.

Almost all power in North America has been generated, transmitted and distributed as alternating current since the late 1800s. Edison's DC systems had previously been popular for local lighting and factory use but because of the low voltages, transmission distance was short and the generators had to be located almost on the customer's doorstep.

These severe distance limitations ended in the United States with the adoption of Nikola Tesla's AC system, in 1895. Alternating current could be stepped up and down with the use of transformers and within a year a 22-mile line was carrying Niagara power to Buffalo.

But with the growing need for tapping sources of generation far removed from load centres, more attention is now being directed to DC. Important technological advances have been made in converting AC into high voltage DC for transmission and in changing it back for local distribution and consumption. The most significant breakthrough was the development of the high voltage DC valve, in Sweden, during the past 15 years.

Several high voltage DC systems are in operation in various countries. The first for North America is presently under construction in British Columbia. In the initial stage, it will transmit 78,000 kilowatts at 130,000 volts from the mainland to Vancouver Island.

The Swedish mainland and the island of Gotland were linked by DC submarine cable in 1954 and the power networks of England and France were joined under the Channel in 1961. Other DC links exist or are underway in New Zealand, Italy, Japan and Scandinavia.

Russia is unlocking the vast power resources of Siberia with DC transmission and this old-new technology could bring some of Canada's far northern power potential to the marketplace. □

*This electrical totem pc is really a coupling capaci which builds up to 350,0 volts and is used in tests measure radio interferen*

# dr. grant talks about

**In these remarks Dr. D. K. Grant, director of Medical Services for Ontario Hydro offers some helpful advice on how to live with stress and tension. Based on his paper 'Mental Microbes of Modern Managers' the message applies to us all.**

In the first place it is important to recognize that stress is a part of life. As long as life exists, stress exists and there is no way we can really avoid it except through death. Some stress or tension is indispensable to action and achievement but each of us needs to find an optimum stress-level and avoid constantly exceeding our quota.

Prolonged, continuous and intensive stress is the problem, as the physiological effects may persist to the point where the system is actually impaired. There is no doubt that stress plays some causative role in such disorders as coronary heart disease, hypertension, peptic ulcer and arthritis although it is not the sole cause of any of these diseases, nor involved in all cases.

In addition to the actual diseases produced in part by excessive stress, the individual may complain of chronic fatigue, or show inefficiency, poor morale, alcoholism and antisocial acts which may even include disloyalty to the organization he works for.

Stress factors are not hard to find on the job. The physical grind of heavy responsibilities, endless crises, long working hours, travel, dinners and meetings is only a small part of the business manager's tension-building burden. The demands upon his mind are remorseless, he has little privacy for h must cope with modern technology and, at the same time, b expert in dealing with people and problems of human relation

Feelings of incompetence or inadequacy may result fro the driving compulsion to do a good job, to succeed, or t attain goals which in reality are out of reach. Further pressur arise out of the need to compete with others in the politic hierarchy of the industry in order to gain promotion.

Nor is the home front without its tension-causing elemen and the pressures and problems of family and social life canno be dropped at the company gate. Many pressures grow out the rapidly increased tempo of modern living with the need fo keeping up with the Joneses and to be seen in the right plac at the right time and with the proper people. Status symbo must be had and displayed at all costs, even if they exceed th family budget.

Obviously there are many other facets of home life such a marital disharmony, disagreement on budgets and heal worries, to mention a few, which may threaten tranquility ar build anxiety in every member of the family.

But not all can be charged to environment. Many successf persons have certain inherent characteristics which intensi stress and the consequences of it. This type may speak of h "job tension" as though it were a badge of distinction to pin o the gray flannel suit. All too frequently the type of individu who rises to the top in a business organization has an inherent tense, nervous, hyperactive and anxious make-up.

He frequently works so hard at achieving success that h neglects his marriage and family life or relegates love of h

fe and affection for his children to second place. He may ɔent too late and find that his wife has developed her own erests and his children need him no longer.

He may also be reaching middle age, 45 or more, and suffer ne anxieties related to "psychological loss" at this time of :. He may feel his good years have slipped away with the loss the adventure of living and see little ahead but increasing rden.

So far we have been examining the patient — let us now ısider some of the things he can do or avoid doing to improve situation.

Most important and perhaps the most difficult step in the ıt against stress is simply to stop and reflect. In this quiet e when pausing for breath, a man should consider carefully life goals — immediate and future — and his progress ards them. He should review his priorities, his ambitions aspirations in both his personal and business life. He should over what his true feelings are about his status and worthleness in life, how much time and affection he devotes to family and whether or not he is fulfilling his role as husd and father as well as businessman. This must be done in r to budget time for the top priorities.

egular leisure time with the family and regular vacations part of my prescription. The man who boasts he has not a vacation in five years is being unfair to himself, his family perhaps to his business. I would also prescribe at least one oy. This not only provides escape from daily routines and sures during working years, but is sound preparation for ement. A constructive hobby is most helpful because it also satisfies the need to create something tangible which is often lacking on the job.

Both at home and in the office, a man must be prepared to delegate authority, be considerate and recognize the rights and needs of others. He must learn to accept the inevitable, be honest and decisive, yet willing to listen as well as to speak. Tolerance, understanding and affection for others will enable him to live in harmony with his family and associates.

It is basic to the improvement of mental health and the reduction of stress-producing situations to learn more about oneself. I would ask our patient to examine his own deficiencies, selfishness, resentments, prejudices, unreasonable expectations and criticisms of others. Having identified them when they exist, he must find better ways of handling these feelings.

The most sacred and intimate of all human relationships is that of man and wife. No one is in a better position to provide love, warmth of understanding and close human companionship than a wife. She is someone with whom a man can talk over his feelings, including those things of which he is least proud. A happy marriage is built on many years of love, co-operation and mutual trust and will go a long way in providing both preventive and therapeutic treatment for "mental microbes."

Underlying the whole theme of my dissertation on "how to succeed in business without really dying," is the philosophy of faith. Fundamental to good mental health is faith in ourselves; faith in others; faith in the desire and the capacity of human beings to work out their problems co-operatively; and faith in the essential decency of mankind. □

Commissioners meeting across the province are making

# vital hydro decisions

Working closely with Ontario Hydro since the early days of public power in the province, the Ontario Municipal Electric Association has provided invaluable co-operation and guidance over the years. Composed for the most part of elected commissioners from the utilities which buy their power from Ontario Hydro, the association is divided into nine districts. The annual meetings of these districts are now taking place across the province and seldom have the subjects up for discussion been of more vital concern to the welfare of Hydro in Ontario. At the association's own urging, Ontario Hydro has completed a two-year study of power costing methods and its recommendations have been presented to the utilities for a decision. Most Canadians are affected by recent legislation in the field of employee pensions and the implications of these changes to the municipal utilities have been high on the district agendas. And recommendations have been made which threaten the very foundations upon which the municipal Hydro structure in the province has been built. Details and other highlights of the district meetings are reviewed on these pages. □

## hydro commissioners fight interference

Recommendations threatening "the long accepted practice of Hydro administration in the province" were the target of repeated attacks at the joint annual meeting of the Northland Municipa Electric Association and the Northeastern Region Association of Municipal Electrical Utilities, in Sturgeon Falls.

In his keynote address retiring District President John Darby, Espanola, told the meeting that there were people who would have municipal Hydro administration come under the jurisdiction of committees of council.

"First it was the Select Committee on the Municipal Act," he said. "Now we have it cropping up in a report by consultant Murray V. Jones in a study of local governments in the Ottawa area."

In both instances, the speaker said, it was recommended that the Hydro commissions be abolished and Hydro affairs added to the heavy load already being shouldered by members of council.

Acknowledging that there might be a need for municipal reorganization under changing condition Mr. Darby said it was essential that revenue-producing services be kept separate from tax-supported municipal functions as with the present system of elected Hydro commissioners. Only in this way, he suggested, would sufficient revenue be plowed back into the electrical systems to maintain high standards of service.

"Think very seriously," he told the mayors and reeves in attendance, "if you are asked to dissolve a system which is regarded far and wide as a model of efficiency."

On a similar theme, Ontario Hydro Chairman W. Ross Strike told delegates that revenue-producing services should continue to be kept entirely separate from those supported by taxes. "This is one of the main reasons," he said, "why we have been able to provide electrical service on a par with the best available anywhere in North America." He thought the time had come for the commissioners to start telling the people about the institution they represented and the principles upon which it was based.

In reporting for the OMEA load building committee, E. C. Dash of Sudbury said it was hard to visualize an effective load promotion program being conducted on behalf of a Hydro utility by a committee of council.

"It would seem that municipal governments have their hands full now," he said, "without getting into a Hydro load building program. I would suggest that when something is well organized and runs efficiently, it should be left alone."

To ensure that their views were brought to the attention of the authorities concerned, District 9 delegates unanimously endorsed a resolution put forward earlier in the week by District 3, meeting in Fort Frances. It called the Jones Report

commendation "a retrograde step and not in
e best interest of the industrial, commercial
d residential users of electric power in
e province."
e resolution, to be forwarded to the
nister of Municipal Affairs, contends that the
ies report contains no good reason
such a drastic departure from the long
cepted practice of Hydro administration in
province. □

## ydro utilities approve ower-costing methods

**trict 6 OMEA devotes annual meeting to ver-costing deliberations.**

proposals for changing power-costing
thods were carefully weighed at the annual
eting of District 6 of the Ontario Municipal
ctric Association, in Guelph, with the delegates
ing unanimously for a system which continues
ecognize the benefits of individual municipal
ities in Ontario Hydro.
nine OMEA districts have now reached
same decision at a series of regular and special
etings across the province. The new plan goes
effect, January 1, 1966.
cting all 359 municipal utilities who
power from Ontario Hydro, the new method
ulted from a two-year study undertaken by
ario Hydro, both as part of its continuing
ew of cost of power principles and at the
uest of the OMEA. While the change is not likely
e reflected immediately at the retail
omer level, it will provide greater uniformity
e bulk power rates paid by the
icipalities and will have the effect in
ong run of creating more uniform
l rates.
cepting the change, the Hydro
icipalities turned down a proposal which
d have virtually wiped out all differences in the
upon which bulk power rates are
lated. Under this "uniform rate" proposal,
cipal equity would be pooled thus
nating tangible recognition of individual
y accumulations. In addition, the cost of
ency standardization would be
d by all Hydro utilities over
rovince.
plaining the proposals to the nine
ct meetings, Ontario Hydro Comptroller
Nastich said changes were necessary in the
sts of (1) rate stability (2) fair allocation
sts and benefits in the light of changed
tions (3) short and long range financial
tions and (4) marketing objectives. A
t decision would make it possible
lement the new costing system on
y 1, 1966, and thus move quickly to a
ffective basis for meeting competitive
nges to the Hydro family.
the costing system selected, the
ual equity in Ontario Hydro, built up by
palities through their contributions to the
tirement program, is retained. But
ity return procedure (benefits) has been
d and simplified. Returns equal to
r cent of accumulated equity will now be
paid annually. There had previously been
a 40 year waiting period with returns
based on debt retirement contributions made
40 years earlier.
At District 6, and throughout the province,
Ontario Hydro Chairman W. Ross Strike has
emphasized the importance of retaining the equity
principle. "As long as there are tangible
benefits to the participants in the sinking fund
program," he explains, "there can be no
question as to the ownership of the Hydro
system."
Mr. Nastich pointed out, further, that
frequency standardization costs will continue to
be borne by those municipalities in Southern
Ontario where the 60-cycle conversion was
actually carried out. However, the amortization
period will be extended for three years, from 1972
to 1975, to minimize the impact of the new
system on rates.
Major changes in the new costing procedure
include the introduction of a fixed energy rate,
further pooling of transmission costs
and the formation of a power
district.
A fixed energy cost of 2.75 mills per
kilowatt-hour will apply to the energy consumption
of all customers. The balance of the costs of
generation will be allocated on demand. At
present 50% of the costs of generation are
allocated on the basis of energy and 50% on the
basis of demand. Operating in conjunction
with a two-part (demand—energy) rate form
for monthly interim billing, the fixed energy
cost will minimize revisions in
interim rates.
All transmission extending from the power
grid will be classified as radial transmission
and the associated cost will be pooled. An
appropriate share will be allocated to each of three
groups—municipalities, rural and direct
industrial customers. The cost attracted by
each group will be allocated to its members on
a demand basis. Thus, distance from
the power grid has been eliminated as a
source of cost differential among
municipalities.
The concept of a power district, incorporating
all primary loads within the province not served
by municipalities, recognizes the diversity
which exists between residential and industrial
loads in the same manner as is the case of
similar loads within municipalities. In the past
these customers have not received the
full benefit of the diversity which
they created.
In the words of OMEA President Dr. R. H. Hay:
"The new system represents another and perhaps
the last important step towards a uniform rate
basis for calculating wholesale cost of
power to the municipalities—a goal towards which
the Hydro family has been moving from the
early days."
With the amortization of frequency
standardization charges completed in 1975,
he pointed out, uniformity of wholesale costs
would be complete except for differences resulting
from recognition of accumulated equity and
differences between municipalities
in the ownership of certain
facilities.
Prior to the vote, District 6 delegates
were urged by Mr. Strike to set aside parochial
considerations in favor of the
common welfare.
"We have shown from time to time",
he said, "that we can set aside our own
individual interests and come up with decisions
based on what is best for the province. I
urge you in this instance to look at the
broad picture and put yourselves
second." □

## electrical groups unite to promote

**Union will mean more effective promotion of the electrical living concept.**

Two of the best known electrical
organizations in the province will amalgamate
to streamline their promotional functions,
delegates to the various OMEA district meetings
were told by Harry Foy, manager of the Electric
Service League of Ontario. The League will
join with the Electric Heating Association to
form a new organization.
Speaking at the Georgian Bay meeting,
and elsewhere throughout the province, Mr.
Foy said a joint committee had been appointed to
iron out details. Consisting of four representatives
from each group, the committee is charged
with determining the purpose, scope and financing
of the new organization.
Formed 43 years ago, ESL is comprised
of electrical manufacturers, distributors and
contractors as well as utility representatives and
others interested in the welfare of the electrical
industry. It strives for greater public awareness
of the benefits of electrical living through
the use of appliances, and regards adequate
electrical wiring in the home as the key
to its objectives.
EHA is the organization which has been
largely responsible for the rapid and successful
development of the electric heating industry in
Ontario. Established in 1959, it endeavors
to maintain high standards of design,
workmanship and installation of electric
heating systems. Included in its membership are
more than 1,100 contractors who have passed its
special training courses. Electrical manufacturers,
distributors and AMEU utilities are among
its members.
In explaining the background of the
amalgamation, Mr. Foy said the proposal
had originated in a resolution put forward by
Sarnia Hydro at a District 8 meeting of the
OMEA. It had also recommended that the
Electrical Bureau of Canada be included in the
union but this had been ruled out as the Bureau is
really a department of the Canadian Electrical
Manufacturers Association.
Following a careful study by a special
committee of the OMEA, a resolution was
adopted accepting in principle the proposed
re-organization and this recommendation was
subsequently approved by the boards of



*Northland Municipal Electric Association's 1965-66 slate of officers, from left, seated: John Darby, Espanola, second vice-president; Ron Duncan, Coniston, president; and L. J. McKinnon, Cochrane, first vice-president. Standing: H. A. Prescott, Capreol, and C. A. Smith, Chapleau, directors; Douglas Hugill, Sault Ste. Marie, third vice-president; and Wes Cooke, West Ferris, secretary-treasurer.*



*New executive of AMEU's Western Ontario Accounting and Office Administration Committee includes: left to right: E. M. Frantz, Ontario Hydro, secretary; C. H. Kew, London PUC, general chairman; Norma Crane, Niagara Falls Hydro, treasurer, and Robert Ion, Brantford PUC, vice-chairman. Conference chairman for next year will be Harry Luckins, Sarnia Hydro.*



*OMEA District 3 executive, from left, seated: A. J. Marshall, Fort Frances, first vice-president; Jack D. Phillips, Schreiber, president; and H. F. Keffer, Sioux Lookout, past-president. Absent is E. J. Hawthorne, Dryden, second vice-president. Standing: W. A. Ferguson, Atikokan, Gordon Wilson, Port Arthur, and Gordon Waghorn, Nipigon, directors; E. A. Vigars, Port Arthur, secretary-treasurer.*

ctors of the ESLO, EHA, OMEA and
AMEU.
rm proposal will now be submitted
ntario Hydro for approval and implementation.
Foy warned that many problems remained
e solved before amalgamation could
place but he hoped that a full report could be
pleted in time for the annual convention of
OMEA-AMEU, in February.
anticipate," Mr. Foy said, "that the
ing up of this new organization will eliminate
culties which have been experienced in
noting the Medallion concept of electrical
g and the promotion of heating by electricity,
greatly assisting in its acceptance by
builders and home owners of
province."
ewing the activities of the ESL,
Foy said that at least as many homes
ld be certified to Red Seal standards this
as in 1964. He said the Medallion
e program was very active with
number of certifications increasing
dily. □

## otlight on pensions

**rtant pension changes outlined at
A District Meetings.**

welfare was a recurring theme
e OMEA district meetings as delegates were
liarized with details in transferring employees
the 35-year-old Municipal Hydro-Electric
ion Plan to the newly-established Ontario
cipal Employees Retirement System. Members
e OMEA-AMEU pension and insurance
nittee, which is headed by P. R. Locke,
nomas, led discussion and answered questions
e complex topic.
imously passed by the Ontario
lature in 1962, OMERS is designed to
rage municipalities and local boards to
de uniform pension benefits for all employees
heir dependents.
e Hydro employees, most personnel
ng for local governments were without
on plans before the inception of OMERS,
others contributed to a variety of
. Among the reasons for establishing OMERS
ne smallness of many local civic bodies in
io, which made it impractical for them
ablish their own pension plans. From
ry 1, the OMERS plan will be available
ployees of Hydro and other utility
issions.
sizing the pension and insurance
ittee's recommendation that utilities
pate in OMERS, Mr. Locke said at Fort
s that each commission must pass a
tion to enter the plan. The resolution must
e forwarded to the Department of
pal Affairs.
explained to the meetings that the
Government had extended OMERS to
employees following representations from
ro pension and insurance committee. The
ttee originally sought amendments
ension section of MHEPP to bring the
line with the improved benefits
RS.
posal was ruled out because of the
ability of maintaining two province-wide
al retirement schemes which would be
almost identical. Too, utilities responsible for other services apart from Hydro would have to maintain separate books for the two plans.

Factors in favor of making OMERS available to employees of local utility commissions include uniformity and stability of premiums and financial and administrative advantages. It will also permanently remove pensions from the area of collective bargaining.

The committee has been assured that OMERS will be integrated with the Canada Pension Plan when it comes into effect.

Mr. Locke said that life insurance for utility employees will continue independently of OMERS, which does not include this protection. Lapsing of this coverage represented "an extreme hazard" for many employees protected under MHEPP who could not buy similar insurance today, he declared.

The life insurance contract with Confederation Life will continue after January 1, with utilities continuing to pay the entire premiums .

It was pointed out that with no more contributions accepted in the pension portion of MHEPP after the end of this year, all employees who belong to the plan will become members of OMERS if their commission elects to join the scheme. Where employees are not MHEPP members, 75 per cent must vote to join OMERS.

After a 75 per cent favorable vote, taking part in OMERS will be a condition of employment for future employees.

MHEPP payments for service up to the end of this year will be fully honored until the death of the last existing employee. Pensions under OMERS will cover the period of service from January 1.

Delegates were told that various surpluses in the MHEPP fund, amounting to approximately $16,000,000, will be used to increase the guaranteed pensions for both employees and pensioners. This will be distributed according to age, length of service and contributions, retroactive to May 1, 1965. The first cheques reflecting the increase were expected to be issued to retired pensioners in October. Later in the month, cheques for the retroactive amount of increased pension from May 1, 1965 (or retirement date if after May) to September 1, will be mailed out.

Members of the MHEPP **basic** plan who come under OMERS will increase their contributions from the present 2½ per cent of earnings to 5½ per cent. Apart from a greatly increased pension on retirement, they will also receive:

*Pension to the widow or children (none previously).

*A disability retirement pension (none previously).

*Immediate vesting of the employer's contribution, (MHEPP members changing jobs could retain their money in the fund until retirement only after 20 years of contributions.)

*Interest upon the refund of a member's contributions when changing jobs. (Previously paid without interest.)

*Elimination of the age restriction for membership. (Age limit of 45 applies to MHEPP.)

The same advantages apply to members of MHEPP's **basic and supplementary** plan, except that pension payments, already comparable to OMERS, will remain approximately the same. Contributions from these members will be increased by ½ per cent of earnings to the same total of 5½ per cent.

Uniform rates and uniform benefits apply to OMERS members throughout the province, Mr. Locke said. Local commissions will continue to match employee contributions.

"We have taken every step to ensure that employees will be well looked after under OMERS," he concluded. □

## northwest on the move

Power consumption in Northwestern Ontario, up 6½ per cent in 1964, is expected to further increase this year, District 3 OMEA delegates were told at their annual meeting in Fort Frances.

I. Carl Ingimundson, manager of Ontario Hydro's Northwestern Region, cited expansion and modernization of the paper, chemical and iron ore industries as major reasons for the higher demand. He said that the marked improvement in power consumption by industry and municipalities indicates a return to growth rates experienced a few years ago. Peak demand of 509,000 kilowatts anticipated this year is expected to increase annually to approximately 596,000 kilowatts by 1968.

Mr. Ingimundson emphasized that sufficient reserve generating capacity is available in the Northwest to ensure that demand can be met at all times. He thought it probable, if forecast demands materialize, that the Thunder Bay thermal-electric station would be placed in service in the fall or winter of 1967-68.

Reporting continued improvement throughout Northwestern Ontario in the use of electricity for heating Mr. Ingimundson declared:

"New motels, apartment buildings, homes, schools, churches and public buildings are adopting electric heating in ever increasing numbers, and there is every reason to be optimistic that the trend will continue. Consultants and architects are at last giving recognition to electric heating in the majority of their studies."

Mr. Ingimundson concluded with a detailed explanation of Hydro's policy in extending service to rural areas. He said that estimated annual revenue from the sale of power must be sufficient to absorb a reasonable share of Hydro's capital expenses



*New District 6 executive is ready to roll. Seated are G. D. Sills, Seaforth, first vice-president; George Shepherd, Elora, president and Doug Seath, Stratford, secretary-treasurer. Standing, left to right, are directors James Shields, Guelph, W. J. Mills, Goderich, C. Lipphardt, Harriston, W. J. Isaac, Mitchell, Howard Scheifele, Waterloo, M. Fisher, Galt, G. R. Cook, Preston, second vice-president, and H. E. Hartley, Clinton. A. D. Simpson, deceased, Stratford, had been elected president. Director R. E. Mountain, Stratford, fills out the vacancy.*



*New executive of Georgian Bay Municipal Electric Association, from left: Herb Carpenter, Orillia, Alec McAuley, Elmvale and Norm Orser, Orillia, directors; Don Watt, Orangeville, first vice-president; John Murphy, Barrie, secretary-treasurer; Dr. J. E. Wilson, Barrie, past-president; J. J. Cross, Huntsville, president; W. E. Theaker, Paisley, Dave Kennedy, Kincardine, and W. R. Tomlinson, Port Elgin, directors. Absent: Thomas Stevenson, Chesley, second vice-president; Col. A. A. Kennedy, Owen Sound, director.*



*Delegates at the Georgian Bay meeting continued discussions informally between business sessions. From left: J. M. Humbley, Ontario Hydro's general manager; D. P. Cliff, secretary of OMEA; J. A. Ariss, Rosseau Hydro, and George E. Gathercole, first vice-chairman, Ontario Hydro.*

onstructing new main distribution lines. The
ibility that an extension may also serve
tional customers in the future is also
n into account.
er, District 3 president H. F. Keffer,
oux Lookout, urged in his opening address
Ontario Hydro further extend service
in the Northwest.
paring the benefits of extended
r service to those which resulted from
onstruction of the trans-continental
ays at the turn of the century, he said that
r should be made available to more
le in Northwestern Ontario "within
onable reach of existing lines . . .
t an initial cost they
fford."
Hawthorne, of Dryden, chairman
strict 3's load building committee,
ted that sales of electric water heaters
expected to reach the 1965 target. Good
ts were also evident in the areas of
nercial space heating, water heating
ooking.
ing some of the load building
ties throughout the district, Mr.
horne emphasized the importance of each
making regular reports. These helped
commissioners aware of what is taking
in surrounding areas as well as in their own
ons, and is a big step in overcoming
unication problems resulting from
ze of Northwestern Ontario,
d.
eaker called for "strong, united
entations" for electric heating of three
for the Aged proposed for separate
ns in the Northwest.
okes, of Schreiber, and W.
f Port Arthur, were named chairman
cretary of the load-building
ttee, respectively. □

## on dollar
## ro program

s gigantic expansion program, which
t 5,000,000 kilowatts to existing
es by 1971 and cost in the neighborhood
ion dollars, was reviewed for delegates
g the joint annual OMEA-AMEU
in Sturgeon Falls by George E.
ole, first vice-president of
Hydro.
aker foresaw no difficulty in
financing the big capital program but he cautioned against complacency anywhere in the operation, suggesting that Hydro was not immune from the pressure of rising costs. He cited interest rates as an example. Bonds now coming due bore interest at about 3½ per cent while the newer issues carried coupons in the five per cent range.

Observing that no major sources of cheap Hydro power such as existed in the past remained to be developed, he said the big modern coal-burning units came very close to matching the cost of power from long-distance generating schemes being contemplated in various parts of the country. We are at no disadvantage in terms of other power jurisdictions, he said.

Mr. Gathercole told delegates that load building was the greatest contribution they could make to the Hydro cause.

"We can effect important economies by utilizing our system to the fullest possible extent", he said. "This can only be achieved by persuading our customers to use more power. While people may tend to take us for granted they still recognize Hydro power as one of the greatest bargains available today." □

## electric heating topping targets

Electric home heating installations in Ontario have already exceeded 1965's sales objective and are expected to total between 8,200 and 8,500 for the year. Reporting at the annual meeting of District 2 OMEA, Don Ramsay, Hydro's director of sales, said it is anticipated that electric heating will be installed in 25 per cent of new houses built next year.

On the commercial front, approximately 90 per cent of all new motels built this year, and 12 per cent of new apartments are electrically heated. Electric water heater sales are also gaining gradually and should further improve next year.

Mr. Ramsay said the use of controlled environment for poultry and other specialized farm operations is of great impetus to Hydro's agricultural sales. Hydro, he said, is playing a prominent role in further developing these techniques.

Wes Edwards, Sudbury, chairman of the OMEA's advertising and sales committee, emphasized in his report that utilities should seek professional assistance in undertaking market surveys. Presented in Mr. Edwards' absence by District 2 secretary H. J. Murphy, of Barrie, the report declared:

"This is the most effective way to determine where to spend advertising dollars; and most important, to learn what customers think of you." □

## office group considers communications problems

**Two-day AMEU office administration seminar attracts 270 delegates to Niagara Falls.**

Words themselves do not have meaning . . . only people do . . . Professor Ralph Dent, Michigan State University, told 270 delegates to the 33rd annual Western Division Accounting and Office Administration conference in Niagara Falls last month. He was discussing communications.

"What you do know that 'ain't so' is the big difficulty in communications", the psychologist explained. Professor Dent told the AMEU conference that there were eight places in a two-way communication where a message could go astray. The first pitfall lay with the originator's choice of words or in the "encoding". Then there was the reception, decoding and interpretation.

"Misinterpretation can cause tragedies," he said, and he cited the word "unconditional" as an example. "During World War II, the Allies demanded an 'unconditional' surrender from the Japanese. Unfortunately the Japanese thought the word meant that their Emperor would be executed. The war dragged out a few more months and two atomic bombs were used to end the conflict. Thousands died because no one thought to ask . . . what do you mean by unconditional?"

Once the message is interpreted, the speaker continued, the receiver acts on the basis of previous experience. "Again, we hear what we want to hear, see what we want to see."

Professor Dent added that the same problems occur when the reply is returned.

Other difficulties he mentioned included tone of voice and physical expression. "You can say yes and mean no, by the tone of your voice," he cautions. "Also, facial expressions or the tilt of your head can indicate the opposite to what you are saying."

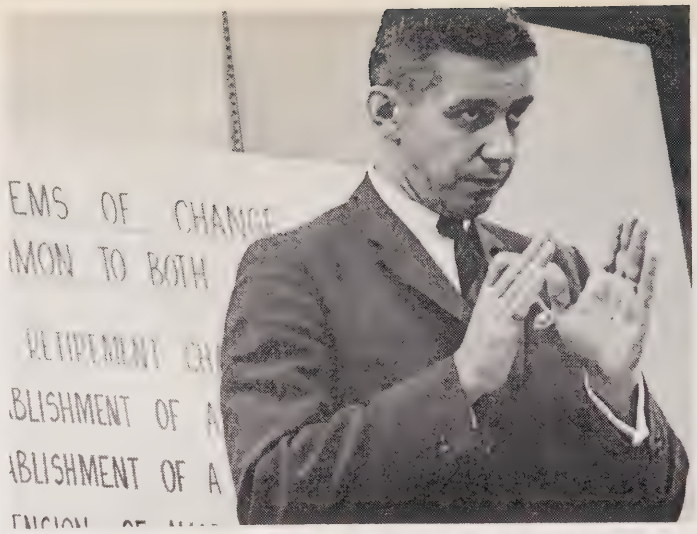
Professor Dent warned the audience to be on guard for deliberate manipulation of common language. He used this example:

"At the World's Fair in Brussels, an American and a Russian car were compared by an internationally-known and neutral expert. The American car was declared the better of the two. But in the Russian press, this report appeared . . . 'In a comparison between automobiles at the World's Fair, the Russian car placed second. The American car placed second to last'."

One of the highlights of the conference was the keynote address given by Rev. M. C. Weissbach of St. Paul's English Lutheran Church who spoke about new horizons in the Christian church and how to apply Christian teachings in our day-to-day business life.

Among the seminars were discussions of billing techniques using data processing equipment. Speakers included F. J. Horsley, Burlington PUC; M. J. St. Pierre and Edward Wagner, Sandwich East PUC; R. J. Haster, Guelph Board of Light and Heat Commissioners.

Utility accounting and office practices were discussed by H. A. Luckins, Sarnia Hydro, while



*Milan Nastich, Ontario Hydro Comptroller, put forward power costing proposals to regular and special meetings of OMEA districts. All nine districts have approved a system which continues to recognize the benefits of individual municipal equities in Ontario Hydro.*



*Admiring a motor-cycle on the main street of Fort Frances, W. J. Fisher, New Toronto, accepted the owner's invitation to take it for a spin. Dr. J. E. Wilson, Barrie, volunteered as pillion rider. They were attending the District 3 meeting.*



*A panel discussion on underground residential distribution was a feature of the Northeastern Region AMEU convention at Sturgeon Falls. Introduced by N. H. MacKinnon, Sudbury, members of the panel, from left are: Alex Dubronyi, London; Bert Fleming, Toronto Township; Don White, North York and John Dawson, Dunnville.*

a panel consisting of J. G. McDonald, Bothwell Hydro, C. E. Bates, Burroughs Business Machines and Mrs. Edna Taylor, Port Stanley PUC, debated the economies of service contracts as against regular maintenance procedures for the upkeep of office equipment. □

## important loads forecast for northeastern region

Steady growth with important new loads on the horizon characterizes the Hydro picture in Northeastern Ontario as described by Regional Manager A. B. Hayman.

Speaking at the joint annual meeting of District 9, OMEA, and the Northeastern Region, AMEU, in Sturgeon Falls, Mr. Hayman reported steady month-to-month increases in the use of electricit with new projects by Texas Gulf Sulphur, Sherma Iron and Canadian Johns-Manville each expected to require from 20,000 to 40,000 kilowatts.

Another large potential load was a zinc refinery for Texas Gulf. "While no decision has been made regarding the location of such a refinery", the speaker said, "we certainly hope i will be in our region and that we will have the opportunity of supplying the 50,000 to 100,000 kilowatts which will be required."

Nickel production was booming in the Sudbury area, he said, and if a proposed refinery were built it would mean an additional load of 50,000 kilowatts or more.

"Optimism also prevails at Elliot Lake," the Hydro manager reported, with the country's uranium stockpiling program keeping up production. He believed the decision to reopen the Quirke mine would mean more employment an added security for the uranium centre.

In describing regional developments on the municipal level, Mr. Hayman said meetings had been held during the year with members of council and interested ratepayers regarding the establishment of a local utility in New Liskeard The townspeople are presently served directly by Ontario Hydro.

He also drew attention to rate reductions introduced by the Sudbury and Espanola utilities. "These were the first rate packages approved in District 9", he said, "for application and publication of net rates rather than the old gross rate concept with 10 per cent prompt payment discount."

Reviewing load building progress on a number of fronts, Mr. Hayman said he would welcome greater activity by the municipalities in the conversion heating market. He said there was also a large commercial market for electric cooking supplementary heating and air conditioning which was virtually untapped.

"We have appointed two sales representatives," h said, "who are available to assist the utilities at a nominal cost but their services have not been in too great demand so far."

The speaker said that the growing use of electricity by the farmers of the region was very encouraging. Average annual farm consumption jumped from 6,228 kilowatt-hours in 1963 to 6,574 kilowatt-hours in 1964.

"Do you know", he asked, "that back in 1948 when the regions were formed, the average annual farm consumption in Ontario was about 2,900 kilowatt-hours?" □

# along hydro lines

## ewartville Extension

s for an $11.5 million extension to the Stewartville generating station, miles southwest of Arnprior on the Madawaska River, have been anced by Ontario Hydro. This is the third major power development auzation on the Madawaska in the past 15 months. Mountain Chute and ett Chute are the others.

vo 50,000-kilowatt generators will be installed at Stewartville. On comon in 1969, the plant will have a total capacity of 161,000 kilowatts.

mmenting on the announcement, Chairman W. Ross Strike said: "We arrying on a steady program of development of remaining hydro-electric and redevelopment of existing plants to increase their peak output. these projects are small in relation to our rapidly growing needs, which be met largely from new thermal stations, they are nevertheless signit and economical sources of new power."

nstruction at Barrett Chute, where two 60,000-kilowatt generators are added, will start in the summer of 1966. Meanwhile, work is advancing y on a 139,500-kilowatt station at Mountain Chute, 25 miles upstream Stewartville. □

## gineers Finance Exhibit

la's professional engineers—about 46,000 of them—are digging into own pockets to finance Engineers' Plaza, their exhibit at Expo 67.

ected to cost between $75,000 and $125,000, the exhibit will feature ture symbolic of their profession. It is to be financed entirely by vol- contributions from engineers across Canada.

project already has received approval in principle from the engineers' associations. □

## clear Pioneering

itest brand of Hydro pioneering was launched with a ceremony Premier Robarts called both important and historic.

ler a bright September sun, he helped Minister of Industry C. M. Drury ydro Chairman W. Ross Strike mark the official start of construction kering nuclear power station.

ady the subject of international interest and acclaim, Pickering is the uclear-electric station to be built by a Canadian utility. Nothing as ists, is under construction or planned in North America.

ceremony took the form of verifying a base line from which all of 66 million installation's buildings will be located. The photo shows barts with a surveyor's transit at right, Mr. Strike at left, and Pickeve C. W. Laycox in between.

ve Laycox said the decision to build the twin-reactor, 1,080,000-



rified a baseline.

kilowatt plant in his township 20 miles east of Toronto, was the most significant in the township's 153-year history.

Among the platform guests were OMEA and AMEU Presidents Dr. R. H. Hay and Stanley Webster, along with representatives of the provincial federal governments, Atomic Energy of Canada Ltd., Hydro commissioners and senior executives. □

## Brampton Sports New Office



*New quarters bring happy smiles.*

Brampton Hydro, matching community expansion, has outgrown its headquarters and recently moved into the new Thistle-Green building which provides about three times the former space. The second-floor office is electrically-heated and air-conditioned. Shown in their new quarters are V. T. Breen, manager, right, and John Spicer, sales technician.

Brampton, one of the fastest growing communities in Ontario, has tripled its population to 31,000 residents over a ten year period. The number of Brampton Hydro customers has jumped from 3,700 in 1955 to over 9,000 at the present time. Similarly, the electric load has increased from 7,900 kilowatts in 1955 to over 31,000 kilowatts in 1965. □

## Appliance Yardstick

Appliance manufacturers around the world are taking steps to restrain individual companies from exaggerating claims about the performance and capacities of their products. Officials of 30 countries, including Canada, who attended the International Electro-Technical Commission meeting in Paris this summer, tentatively agreed to a standard method of measuring the performance of five major appliances — washing machines, cooking ranges, vacuum cleaners, heating blankets and irons. The standard code, now being drawn up, is aimed at providing the consumer with an accurate yardstick to assess the relative size and merits of appliances, regardless of origin. □

## Metermen to Convene

Delegate participation in demonstrations will be a new feature of the AMEU's fourth annual Metermen's Workshop, scheduled for November 25 and 26 in Toronto.

While retaining the popular small-group discussions for exchange of experience, this year's gathering will have an instructional demonstration of cross-phase meter reading by John Dawson, manager of Dunnville PUC. The technique is a way of verifying metering connections and gaining added insight into the nature of customers' loads.

The workshop, to be held at the Skyline Hotel, is expected to attract more than 200 delegates. Utilities represented at the second and third workshops numbered 77 and 81 respectively, compared with 67 at the first. □

## Special Pension Meetings

Hydro utility administrative personnel are attending a series of meetings throughout the province to learn details of the Ontario Municipal Employees Retirement System. Utility employees will be transferred to OMERS from the Municipal Hydro-Electric Pension Plan at the end of this year, provided their commissions pass resolutions to enter the plan (see Spotlight on Pensions, page 17).

The special meetings, being held on a district-by-district basis, began at Port Dover on October 6. Details of OMERS and the administrative respon-

sibilities involved in the plan are being presented by John Millman, secretary-treasurer of the OMERS board, Doug Bond, representing Confederation Life, and R. S. Reynolds, vice-chairman of the OMEA-AMEU pension and insurance committee. The trio is also prepared to answer questions from the floor.

Meeting dates include: Kingston, October 18; Collingwood, October 28; Chatham, November 15; and London, November 16. Arrangements are underway for meetings in the four remaining districts. □

## Toronto Lineman Receives BEM



*Personal congratulations from the Governor-General.*

The British Empire Medal and the personal congratulations of Governor-General George Vanier went to Harold Acornley, Toronto Hydro lineman, at a recent investiture held at Government House, Ottawa. He is shown receiving the coveted award.

Mr. Acornley, who saved a fellow employee from probable death when a defective transformer exploded and burned last year, is also the recent recipient of the Bronze Life Saving Medal of the Order of St. John, presented at Toronto City Hall. This is the first time this medal has been awarded to a Canadian in a number of years. □

## Summer That Never Was

The summer that never was has gone and probably only at Ontario Hydro will it be remembered with any kind of affection. Weather records indicate that only 10 or 12 summers in the past 100 years have been as cold and damp as this one.

During August, average precipitation was above normal throughout Hydro's East System with the heaviest rainfall, between six and ten inches, being recorded in the Ottawa River watershed. While the flow of the Niagara River was still 37,000 cfs below normal in August, this compared with a flow of 42,000 cfs below the median in the same month last year.

The outlook for Lake Ontario levels during the winter months is also more favorable than it was at this time last year. And total volume of usable water in storage other than the Great Lakes was greater in August — about nine per cent above normal as compared with nine per cent below normal in the same month of 1964. As a result, improvement in output of hydro-electric plants has been quite marked. □

## municipal briefs

**William Secord** has succeeded Frank Jannaway as general manager of York Township Hydro. He had been assistant general manager and chief engineer of Brantford PUC for the past 14 years, where he helped direct the building and expansion of power services and modern street lighting in that city. The post of chief engineer at Brantford PUC has been filled by Robert Wilson, now with R. H. Nichols, a Toronto engineering firm. Mr. Wilson joins the PUC November 1.

**J. A. McKillop,** retired manager of London PUC, has left for Trinidad where he will work for a year with the Pan American Health Organization, a branch of the United Nations' World Health Organization. Mr. McKillop will be assisting a new board established by the Trinidad government to continue the country's massive water and sanitation program.

**New Liskeard** is the latest municipality to consider establishing its own Hydro Commission. Presently served directly by Ontario Hydro, this Northeastern Ontario community has been advised that the distribution system would cost about $500,000.

**A. David Simpson,** 55, a member of Stratford PUC for the past seven years, died in hospital last month on the day he was re-elected (in absentia) for his second term as president of District 6, OMEA. Mr. Simpson, who operat a dry cleaning business in the city, was a former mayor of Stratford a served as a councillor for eight years.

**Dr. R. E. Weston,** a Tillsonburg PUC commissioner since 1927, died recent A former mayor, councillor, and PUC chairman, Dr. Weston had practic medicine in Tillsonburg for 56 years.

**Eby Rush,** that inexhaustible veteran of the Waterloo PUC, was recen honored in Guelph at a meeting of the Grand Valley Municipal Electric Assoc tion. A citation, presented by Ontario Hydro Chairman W. Ross Strike behalf of District 6, congratulated him on 45 years of Hydro associatio

**A strong trend** towards electric heating in Oakville is reported by R. Barlow, PUC manager. Electrically-heated apartment suites are renting fast as they are built, he says, and there are now 230. He also notes stea growth in the conversion market and puts the total of electrically heat homes in this fast-growing lakeshore community at 160.

**Gloucester Hydro** plans to rent a building, with the option to purchase five years, for office and storage use. To be located opposite the townsh offices on Highway 31, it would be ready by the end of the year.

**Stratford's** land area will be expanded by nearly 50 per cent on January The city's present area of 3,263 acres will increase by about 1,500 acr which have been annexed from surrounding townships. Terms have be approved by the Ontario Municipal Board.

**Nepean Hydro,** after a deluge of broken lights and damaged inspection plat on standards, has appealed to parents in the area to help curb this wave vandalism. A message was mailed with Hydro bills asking parents to wa their children against damaging utility property.

**Lindsay Hydro** plans to renovate their nearly 100-year-old headquarters a double the floor space. The $12,000 refurbishing job, which will also clude an external face-lifting, will coincide wtih Canada's centennial.

**A "shadow" commission** has been formed to deal with problems affecti utilities merging with Windsor Utilities Commission, January 1. Represen tives, which include Maynard Totten, chairman, Sandwich West Hydro; R. Roy, commissioner, Sandwich East PUC and Edmund Cecile, chairman a R. C. Mott, commissioner, Riverside PUC, met with the Windsor commissi recently to study preliminary reports on the annexation move. As co-ordinat Glen Fisher, administrative assistant to the Windsor general manager, seeking ways to dovetail employees, equipment and procedures into a wo able arrangement.

## Electronic Oven Hot Seller

An electronic "cooking center" being manufactured in the U.S. by the Tapp Company is said to be exceeding earlier sales forecasts by a wide marg Introduced last spring in Chicago, the backlog of orders for the free-stand style electronic range has led to increased production schedules and overti in this department. The cooking center features an electronic oven at e level, four conventional surface units and a 24-inch electric oven below. T new unit fits in 30 inches of kitchen space and is installed like any c ventional electric range.

## OMEA President Honored

Kingston was the scene of a precedent-setting Ontario Municipal Elect Association testimonial dinner honoring president Dr. R. H. Hay. Tribute w paid to Dr. Hay who is also chairman of the Kingston PUC, by several of t 75 guests which included members of District 1, OMEA, Kingston ci officials and Ontario Hydro personnel. Stanley Webster, of Tillsonburg, pre



*The president gets a gavel.*

of the AMEU, said, "Dr. Hay has impressed me as a man who knows what ants to do . . . who isn't afraid to expound his theories."
ntario Hydro Chairman W. Ross Strike credited Dr. Hay with setting the of resistance to proposals which would have the effect of amalgamating ublic utilities with municipal governments. Dr. Hay, center, is pictured ecting the engraved gavel presented by Ontario Hydro with P. R. Locke, homas PUC chairman and a past-president of the OMEA, left, who acted aster of ceremonies for the occasion, and Mr. Strike. □

## strict President Honored



*itcase for service.*

E. Wilson, left, of Barrie, past-president of District 2, OMEA, receives of luggage from president J. J. Cross, Huntsville, "in appreciation of ce to the Georgian Bay district." The presentation was made at this s annual meeting at Elgin House, in Muskoka. □

## rgest Transformer

st power transformers ever ordered by Ontario Hydro will be installed e new Lambton thermal-electric station, south of Sarnia.
nadian General Electric was awarded an order to supply four 550,000- ransformers at a cost of approximately $2 million, including Federal tax. The company submitted the lowest of five tenders. Delivery of the transformer equipment will start in March, 1968.
has already received a contract for the station's four 500,000-kilowatt ating units. Other major equipment is also on order from Canadian acturers. □

## ogress at Lambton, Pickering

uction crews will begin sinking 6,000 steel piles for power-house itions at Hydro's Lambton project near Sarnia in December.
ineers found tube-shaped piles best suited to conditions at the Moore hip site. Piles will be driven to a depth of 140 feet through clay to k and filled with concrete to support the 200-foot high, 930-foot long ting plant.
ivation, grading and building of embankment fills and roads has be- the Lambton site and workshop construction is underway.
nwhile, construction forces have started land preparation and shore- otection for Pickering nuclear power station just east of Toronto. ork includes construction of a 1,400-foot long dike extending 400 to the lake. The area behind the dike will be pumped dry for con- on of the twin reactor buildings of the 1,080,000-kilowatt plant. □

## petual Motion

ine producing about 20 per cent more atomic fuel than it consumes led the forerunner of an operation which will ensure a plentiful supply tricity for the next 1,000 years, was dedicated on an Idaho desert y.
rimental breeder reactor No. 2 of the Argonne National Laboratory icago, could theoretically operate forever, producing heat to boil water duce steam to turn turbines. The reactor is still under development far the project has cost $100 million. Considered the second gener- breeder nuclear reactors, it is only one-fifth the size of a commercial but it can produce 20 megawatts of electricity.
eorge W. Beadle, president of the University of Chicago which s Argonne for the U.S. Atomic Energy Commission said, "Today we e that our reserves of fossil fuels are not sufficient to meet the power requirements of future generations indefinitely. But we can predict that long before our mines and wells are near exhaustion, the efforts of the pioneers working here today will provide power for generations to come." □

## Marketing Seminars Beginning

Approximately 50 marketing management representatives from municipal utilities and Ontario Hydro are expected to attend each of four study seminars to be held in the Toronto area beginning in November.

Speakers include communications authority C. W. Wright, who also directs the National Sales Executive Club's sales course; C. W. Palmateer, Hydro's advertising manager; and David W. Ross, principal of the company under his name which specializes in organization planning and manpower development.

The seminars, each lasting three days, will open on November 3, November 17, December 1 and January 12. The December seminar, dealing with rural sales, will be confined to Ontario Hydro personnel. Reservations for the seminars are being handled by the consumer service departments in each Hydro region. □

## Underneath the Plaster

An electronic device to locate faults in radiant heating wiring concealed in plaster ceilings, has been developed by Ontario Hydro's Electrical Research Department. The unit, consisting of two small boxes and a probe, is expected to reduce the cost of construction repairs and minimize disturbance to customers.

One box containing a tone generator is attached to the wiring at the thermostat. The other box and the probe are carried by the operator. Continuous sound from an amplifier in the operator's box is interrupted as the probe moves on the area where the fault lies.

Seven fault-locators produced by the department since February are being distributed to Hydro's various regions. Similar equipment is not available commercially.

The department is continuing research into developing a device for locating faults in floor cable. □

## Bonus Electric Blanket

A free electric blanket is being offered with every new electric clothes dryer sold as part of the "Hydro Special" campaign in Ontario, October 2 to November 20.

The province-wide promotion of electric clothes dryers is being supported jointly by appliance dealers and electrical utilities. Campaign displays of electric dryers in participating appliances stores and electrical utility offices will be identified by the "Hydro Special" theme.

The promotion is also tied in with the Canada-wide "Waltz Through Washday" campaign by the Canadian Appliance Manufacturers Association during the same seven-week period.

At the present time, nearly one of every three Ontario families enjoys the convenience of an electric clothes dryer. □

## New Symbol on the Move

Widdifield Hydro and Ontario Hydro service trucks are shown wearing Hydro's "New Look" for the first time in the Northeastern Region. Ontario Hydro and those municipal utilities participating in the new corporate identity program will wear the vermilion and orange symbol on their vehicles. To date, approximately a dozen utilities have applied for registration and the symbol co-ordinator has a long list of future utility presentations. □




*Symbols in the north.*

## Generating Station Computer

A computer with an extensive memory system will be used in conjunction with the final four units at Lakeview G.S. for performance and engineering calculations and to measure station efficiency.

The new computer, being built by Canadian General Electric, is scheduled for delivery next summer. It will be contained in six cabinets. Equipment will include 13 typewriters as well as magnetic and paper tape units. □

## Rampart Folly?

The Alaska Rampart Dam project, a proposed development on the Yukon River, would cost an estimated $2.8 billion and provide an ultimate power output of nearly 22 billion kilowatt-hours annually, reports a recent issue of Electrical World.

Engineers estimate it would take 20 years for the Yukon River to fill the Rampart reservoir, an area larger than Lake Erie, which would back up almost to the Canadian border. A recent study by the U.S. Interior Department has increased enthusiasm for the Rampart Dam, and a special government committee is now preparing a report for the White House. The project involves a 2,000 mile transmission line from the power site in Alaska to Washington State.

Not everyone agrees that the installation is practical. Representative John Saylor, Republican-Pennsylvania, calls the proposed Rampart project, "North America's most northerly, most extravagant and most absurd, power plant. Saylor said, "16 steam-electric plants, supplying more than twice the power of Rampart, could be erected at no more expense than the proposed Alaska illusion." □

## Converting to Single Meter

Prior to approval of the all-electric rates for residential service in the Ontario Hydro rural system, electric heating services were supplied through a second meter and billed at the established heating rate. Subject to the customers' approval, arrangements are now being made to convert all dual meter bases on premises of all-electric customers to a single meter wherever economies can be achieved. □

## Remote Control Teaching

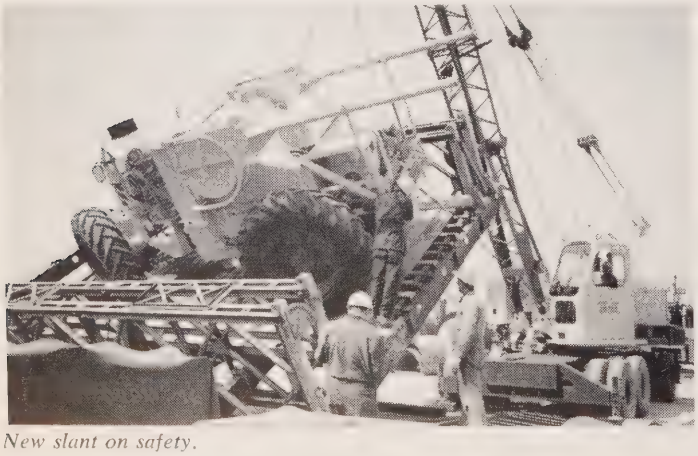
As in Canada and the United States, qualified teachers are at a premium in Britain, and television is helping cope with the shortage. Many British schools, colleges and universities make use of closed-circuit television for teaching, but in Glasgow, Scotland, the largest educational system of its kind in the world is being assembled.

To link nearly 300 schools and colleges, it will transmit lessons produced by teachers in their own classrooms and laboratories. The system will use directional microwave transmission to "satellite" clusters of schools and colleges linked by cable. Annual cost, including production, is estimated at $150,000.

Smaller versions of the same system are planned in four English centres. □

## The Tilt Test

A new type of articulated wheeled vehicle used by Ontario Hydro for such tasks as spraying rights-of-way and planting poles is shown being put through a series of tilt tests at Manby Service Centre. Toppling tests, making use of Bailey Bridge sections, were aimed at determining safety factor and as a guide for Hydro modifications to the vehicles. □



*New slant on safety.*

## EHV Forging South



*Another vital step in super highway of power.*

Canada's first extra-high-voltage transmission line is steadily pushing sou from Barrie, and will reach its terminal at Kleinburg, north of Toronto, ne year. The second stage of the line, running from Sudbury to Barrie, recen started operation at 230,000 volts.

Early in 1966, power will be raised to 500,000 volts on the first secti of the line which connects the James Bay watershed hydro-electric plan to the Martindale transformer station at Sudbury. This line has been operation since 1963, operating at 230,000 volts.

At the $5,000,000 Hanmer transformer station, five miles north of S bury, work is almost completed. Line construction crews are shown p paring to hoist cable assembly into position on a terminal tower in t Hanmer yard.

When the EHV line is complete, the entire super-power highway will oper at 500,000 volts and will supply 551,000 kilowatts of energy or enou power for the combined requirements of Ottawa, London and Windsor.

## Siberian Project World's Largest

Greater by 500,000 kilowatts than the combined capacity of all pov stations on both sides of the Niagara, the world's largest hydro-elect station is nearing completion in south-central Siberia. Stretching appro mately three miles across the Angara River, the 4,500,000-kilowatt Bra project has been under construction for eight years. The first of its generators went into production three-and-a-half years ago.

## Their Cup of Tea

Britons are learning fast that central heating is not an extravagance. U recently, most heating units in British homes were the portable, radi type, but in the last three years a nation-wide campaign by the utilit and manufacturers to popularize thermal storage heaters is changing trend.

The heaters are made of "bricks" of resin bonded ceramics around wh resistance wiring is coiled.

Because of their ability to store heat the units have helped boost peak load while shaving the heating peak as fewer conventional heat are being used.

## August Energy Production

Primary energy provided by Ontario Hydro in August totalled 3.39 bill kilowatt-hours, an increase of 8.3 per cent over the same month a y ago.

For the first eight months of 1965, the total is 28.25 billion kilow hours, up 6.4 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand in August v 3.64 billion kilowatt-hours, 2.5 per cent more than the previous month.

The seasonally adjusted total for August represents 43.67 billion kilow hours at annual rates. This is 313.9 per cent of the energy demand in 194

# off the wires

Rare as they are, power failures still occur and ey affect people in different ways. Take the young ockville gaffer who phoned the PUC about one nute after a falling tree had interrupted electrical rvice at 11 a.m. and asked if the power would restored in time for him to see the Andy iffiths show on television.

He was assured that every effort would be made light up his picture tube in time for the big event. wer flashed back on at 11:35 a.m. and at 1 p.m. e youngster phoned back to express his gratitude. his mind, at least, the utility will always be tops cause they did it all for him.

It gets mighty cold in Manitoba but the Hydro lesman out there are hot on electric heat. In ct, last winter, they sold one customer a two- owatt heater to warm up a cooler. And he's happy out it. A branch of the Canadian Legion, it seems, s having trouble with beer freezing in the cooler til the Hydro boys, particularly understanding, rhaps, in matters of this sort, moved in with satile electric heat.

Here in the east, of course, the problem would ver exist. Water turbulence created by reaching nds would prevent ice from forming.

For all its efficiency, the electronic age some- es comes a cropper as worshippers at St. Laur- ce's Church, Petersfield, England, will testify. By ne twist of its electrical innards, the new organ prone to crackle out with police and fire depart- nt calls in the midst of its Mendelssohn.

"Very upsetting" is the way one member of the gregation put it, and we are inclined to go along h him. Fancy trying to meditate on the great ond to the accompaniment of Sally the Street- ker's latest shenanigans.

As the Sentinel-Review points out, the boys from odstock PUC really get "behind" their pro- ional campaigns. During a recent sojourn in pital, Peter Parker, secretary-treasurer, startled head nurse with his devotion to the cause. She preparing the patient for treatment when she ced imprinted on the nether regions of his back ur Hydro — live better electrically."

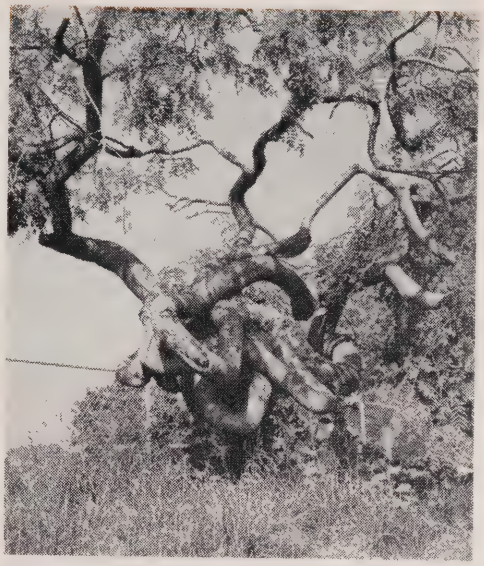
Well of all places", was all she was able to ter in the face of the unusual billboard.

onsensus is that the branding took place when bbing solution transferred the words from a let of matches to the hip pocket area of the etary-treasurer's anatomy.

any event, this is one advertisement Pete isn't nxious to display.

s a writer we are pledged to avoid the cliche ever possible and to steer well clear of old- s oned and meaningless maxims after the order e rolling stone, the timely stitch and the dull Maybe that's why we take a perverse pleasure ever we see a homely old saw born out by acts.

e twisted tree in our photo is a case in point. ed on the site of Ontario Hydro's big Picker- uclear power plant, it's been sketched and



photographed many times and Hydro has no plans for its demise. But until recently, the cause of its deformation was unknown.

It all came about, apparently, as a prank played over 60 years ago by some farm lads. One of the culprits, now in his seventies, recalls that the pliant limbs of the young sapling were easy to twist and remained intertwined.

Ah well, as the twig is bent. . . .

■ "Fun furnaces" are among the latest products of our affluent society and they come in 35 breath-taking colors from Bikini Coral to Emberglow and Apricot. According to a report in the Globe and Mail, this is a first for Canada and while the achievement probably doesn't rank with the wheel or the steam engine in the evolution of society, a Lilac or Galleon Gold furnace squatting in the basement would be hard to beat as a status symbol. Chances are the next-door neighbor is still trying to keep warm with a dull-as-dishwater gray or green job.

Why color a furnace? As the newspaper points out, why not? But aside from this compelling reason, the manufacturer believes that coloring furnaces will make people "heat conscious".

Hmm. Could be, but it seems to us that people are only heat conscious when they are too hot or too cold. That's why people who live in electrically heated homes are inclined to forget about the heat source — they're just plain comfortable.

■ One of the hazards associated with earning one's living at the throttle of a big diesel locomotive is about to be eliminated — elimination. Ever since the first Canadian railway began operations 130 years ago, lack of toilet facilities in cabs and cabooses has given rise to jokes and quips about the staying power of railroaders. Electricity is now coming to their rescue.

The CNR plans to spend $1,500,000 on a nine-year program to equip all its diesels with electric toilets. It thus becomes the first major railway in North America to get at the seat of the toilet problem. The unit utilizes some of the locomotives electric power to incinerate the wastes, eliminating disposal worries.

Obviously, the CNR has not been sitting down on the job and deserves to be congratulated for a major breakthrough in personnel accommodation. At the same time, we wonder if this spells the end of the famous old sign: "Please refrain from flushing toilets while the train is standing in the station".

■ And while we are getting to the bottom of things, here's an item on a new electric toilet trainer for tots that lights up when success has been achieved. According to the manufacturer, it is psychologically harmful to a child to have his mother lift him to see if he's done his duty. The Baby Biffy gets around the problem with an automatic indicator which lights up when production is deemed sufficient.

Sounds like quite a load builder. Now all we need is an electronic forecaster able to predict the intentions of kiddies in the pre-potty age group.

■ There is something ominous in a report carried by the Ottawa Citizen on the Russian situation. Sturgeon in the Soviet Union may soon be declared obsolete and hydro is back of it all.

Caviar, we are told, once plentiful in Russia, has become a rarity because of a sharp decline in the sturgeon catch attributed to the building of hydro-electric plants. These cut the fish off from their immemorial spawning grounds in the headwaters of the Volga.

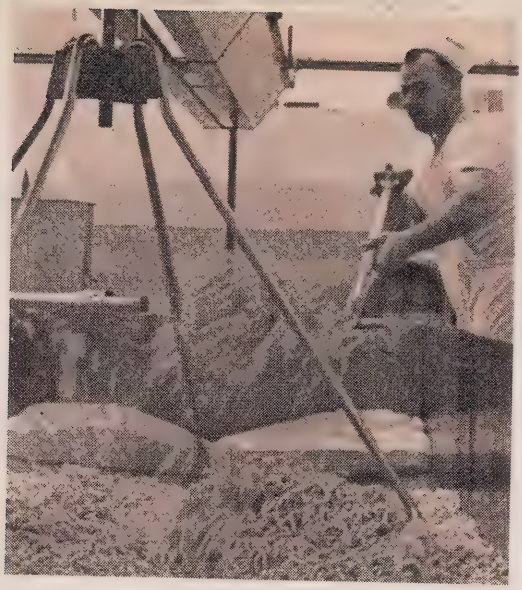
Not ones to tolerate a famine in their favorite delicacy, the Russians have, the report contends, developed a synthetic caviar which cannot be distinquished from the product of the sturgeon. Even more frightening developments are forecast for the future.

Agriculture as we know it today will be completely eliminated, according to the Soviet scientists, and a number of huge synthetic food plants located in various parts of the country near deposits of coal or petroleum, would feed the entire population. Worse still, the transition from beefsteaks to coalburgers is expected to take place within the next two or three decades.

The mind boggles at the effect on Canada. Who can imagine a wheatless prairie, a cowless Ontario and a fishless Maritimes. Not only would it play havoc with our provincial coat of arms but it would leave politicians with little to promise in the way of subsidies.

Consider, too, the plight of our Ottawa diplomats. At Soviet cocktail parties they will have to contend with chemical caviar in addition to microphones in their martinis. □

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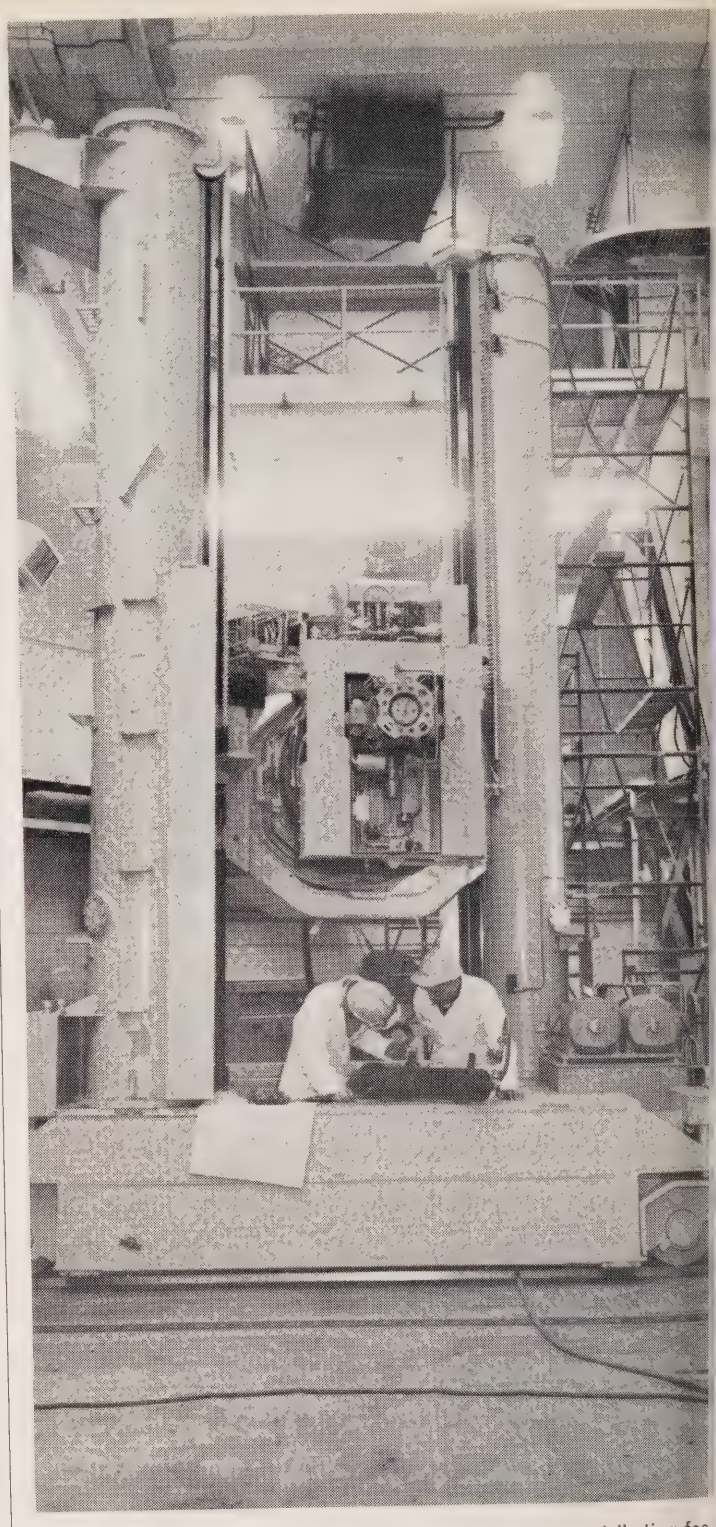
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**Power From the Atom.** Refuelling without shut-down is a contributing fac in the low cost of producing nuclear electric power by the Canadian syste Complex fuelling machines like this one being assembled at Douglas Pc Nuclear Power Station make it possible. The machine's head, seen above men, moves up and down between the twin columns of the wheeled carri which moves left and right on tracks.

The vertical and horizontal movement allows the machine, remotely c trolled, to lock on to a specific one of 306 channels to add a fuel bun An identical machine at the other end of the reactor receives fuel bun forced out by the insertion of a new one.

Except for the fuelling machines, all major equipment including the reac has been installed at Douglas Point and the many systems are being tes The 200,000-kilowatt station, scheduled to produce first power in 19 marks the first use in Canada of a digital computer in the control c generating station.

# pellets and progress

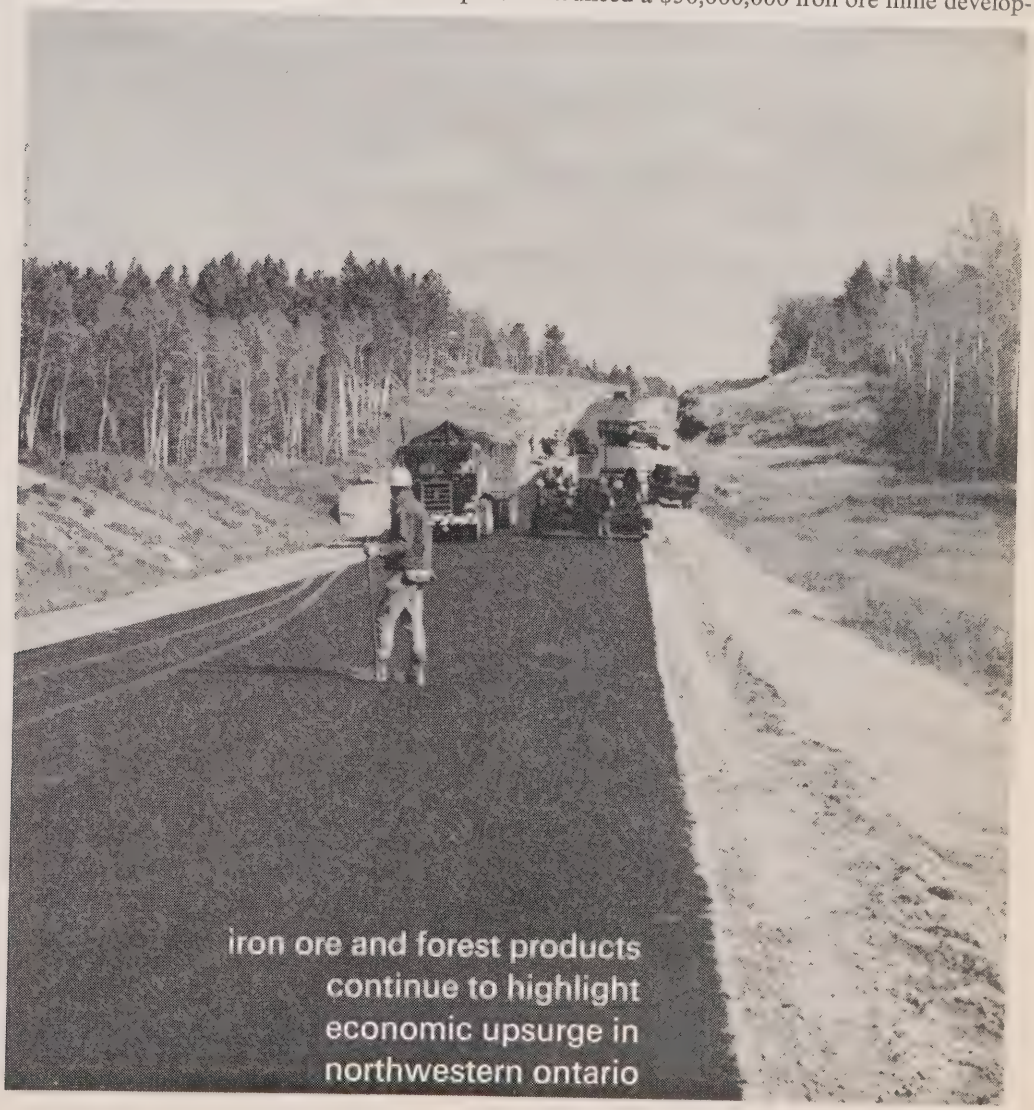
After a period of relative quiet during which the spectacular developments of the post war era have been consolidated and digested, Canada's Tomorrow Land is again stirring restlessly. The silence of this vast region of lakes and forests is being broken repeatedly by the noise and fumes of site-breaking bulldozers. Northwestern Ontario is on the move.

New and improved roads and the extension of hydro lines are two of the keys unlocking the riches of this huge treasure chest which accounts for about one half of the province's entire area. Mining and forestry are spearheading the development. Current expansion in these two fields is conservatively estimated at $147,000,000.

With annual production exceeding $200,000,000 annually, the forest and forest products industries are in the midst of a $70,000,000 development program. Involving at least 10 pulp, paper and other wood-based operations, the program is highlighted by a new kraft plant for Great Lakes Paper Company at Neebing-Fort William, scheduled for completion next year, and major expansion of Domtar Newsprint's Red Rock plant.

Most of the mining outlay is for expanding existing iron ore developments and launching new ones. So great is the potential in this area that the program could have a salutory effect on Canada's balance of payments problem and give more self-sufficiency to the steel industry. At present, iron ore imports from the United States amount to nearly 5,000,000 tons annually.

The first of four slated iron ore pelletizing plants — at the Caland Ore Company's Steep Rock range operation five miles south of Atikokan — is scheduled to begin production next month. Subject to final engineering studies, the Steel Company of Canada has announced a $50,000,000 iron ore mine develop-



iron ore and forest products continue to highlight economic upsurge in northwestern ontario

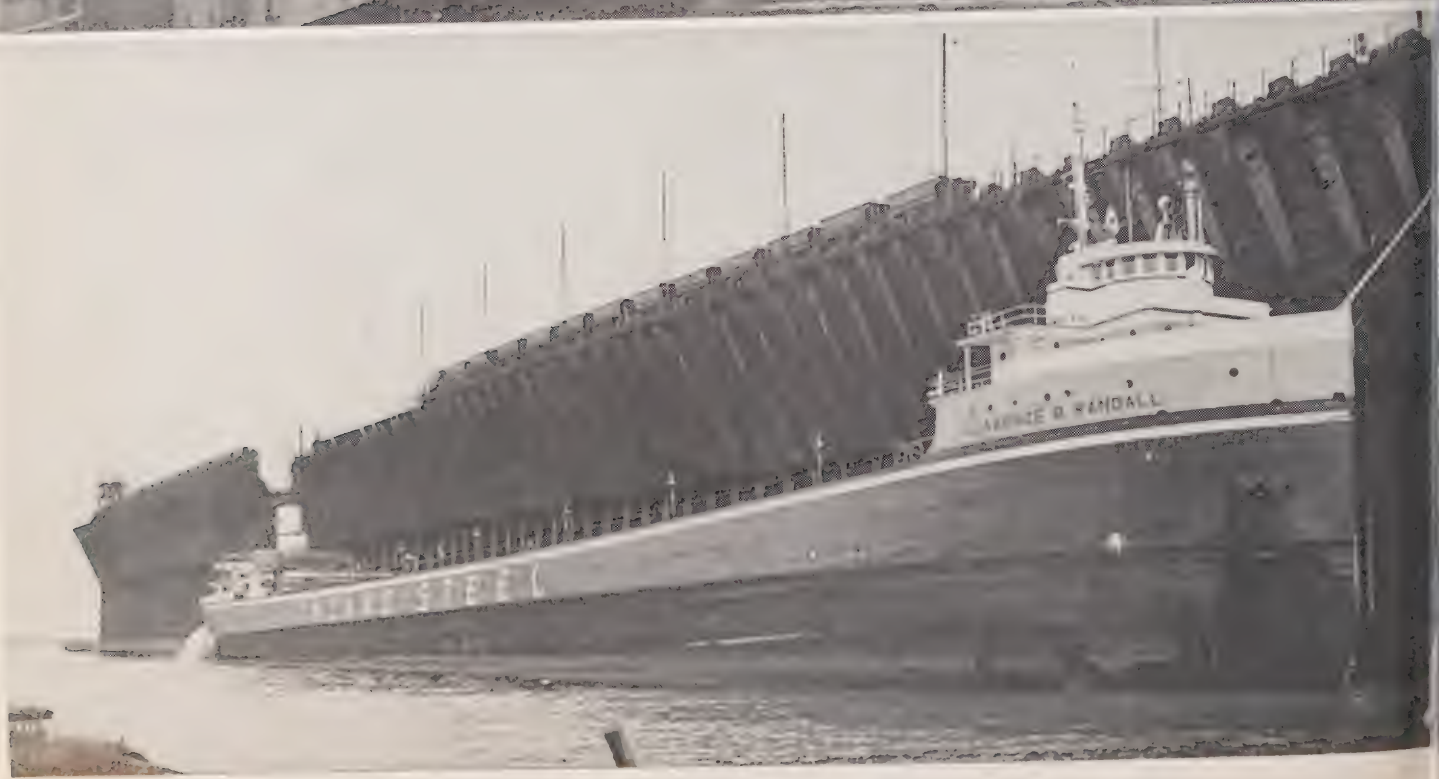
ment and pelletizing plant for Bruce Lake, 30 miles south of Red Lake and Balmertown, while Algoma Steel Corporation is considering a similar project on property northwest of Geraldton. Steep Rock Mines, at Atikokan, also intends to build a pelletizing plant, while Great West Mining Corporation plans to develop its iron ore property near Emo.

But all is not iron that glistens in the Northwest's mineral pot. Copper, zinc and silver mining was recently extended in the Manitouwadge area, the Sapawe gold mine is undergoing major shaft and mill expansion, and Zenmac Mines plans to concentrate zinc on its property north of Schreiber. Large-scale programs of underground development are underway in the Red Lake gold field, at the Golsil mine further north, and at the nickel-producing mine of New Metals Mines, northwest of Kenora.

Declares Neil Edmonstone, vice-president of Steep Rock Mines: "Apart from anything else that might result from the ceaseless prospecting activity for precious and base metals, the production from known iron reserves in the f seeable future will increase the productio Northwestern Ontario's mines by $225,0 000 annually to a total of $335,000,000".

Plants to supply the needs of the reso industries are a feature of new secondary dustry locating in the Northwest, inclu chemical plants at four locations, wire w and heavy industrial manufacturing. Other industries range from a new fish proces plant at Keewatin to fibreglass boat buil at Rainy River.





Another phase of the Northwest's construc-
n boom is a multi-million dollar program of
unicipal and utility improvement affecting
actically every community. New housing
velopments, increased tourist accommoda-
n, new shopping centers, department stores,
spitals and educational facilities are also
mmonplace.

Perhaps the best measure of the expanding
onomy in the Northwest is increased power
nsumption. Anticipated peak demand of
9,000 kilowatts this year is 44,000 kilowatts higher than in 1964, and should steadily increase to 596,000 kilowatts by 1968, states I. Carl Ingimundson, manager of Ontario Hydro's Northwestern Region.

"The marked improvement in power consumption by industry and municipalities indicates a return to the growth rates experienced a few years ago," he said.

New highway and road developments continue to knit the Northwest closer together both physically and commercially. Latest of these is the 90-mile extension to Highway 11 from

*Iron ore is railed to the Lakehead and loaded into bulk carriers with special hoppers. It took over five years to drain lake, below, enabling Caland Ore Company to develop giant, underlying orebody. Part of company's new $15,000,000 pelletizing operation near Atikokan is shown, top left.*



Atikokan to Fort Frances, constructed at a cost of $20,000,000 through rugged, spectacular terrain and a difficult water barrier.

Opened this summer, the historically-named Voyageur Route lops more than 200 miles from the previous highway connection between the major districts of Thunder Bay and Rainy River. A three-and-a-half mile causeway across Rainy Lake is one of the features of the new link. Island-hopping in three sections, the causeway utilizes new construction techniques and is the largest prestressed concrete structure in the Commonwealth.

"New benefits from the highway are already evident," states Alexander Phillips, of Port Arthur, general manager of the Northwestern Ontario Development Association. "Extensive outcroppings of mineral in the region surrounding its route are drawing geologists and prospectors, the cost of hauling timber and pulpwood is reduced and the Lakehead population centers are opened to the fledging dairy industry in the western areas.

"The new road has also resulted in the building of new cottages and year-around la shore residences, with additional tourist c fitters camps, resorts and motels at the pl ning stage," he said.

Other indicators auguring well for Northwest's economy include: ever-increas numbers of visitors giving added boost tourism — the third largest industry; additic grain sales to the Soviet Union and ot countries, which should mean that tonn through the Lakehead ports this year will ec 1964's record-shattering total; and ne



000 mining claims registered in the first half the year — more than double the total for e same period last year.

Lack of people, however, remains one of e Northwest's greatest handicaps. Larger in ze than France — biggest of Western rope's nations — there is just over one in- bitant per square mile in the area between anitoba and the districts of Algoma and chrane.

The Northwest's population, totalling around 0,000, is increasing at the rate of about 5,000 a year. An important facility which should aid in retaining young people in the region is the newly-designated Lakehead University, now undergoing a $3,000,000 building expansion at Fort William.

"Whatever the factors responsible for relatively slow growth and semi-isolation in previous decades, Northwestern Ontario today possesses most of the essential ingredients for dynamic development," declares Mr. Phillips. "Not the least of these is the mettle of the people." □

*Giant causeway spanning Rainy Lake is a feature of new highway connection between Atikokan and Fort Frances. Expansion of newly-designated Lakehead University at Fort William and paper plant at Dryden is part of huge capital development program affecting all segments of Northwest economy. St. Lawrence Seaway's "Mile O" marker is a familiar sight to Port Arthur visitors.*







# creative aging

is the goal suggested in these remarks by doctor d. k. grant director of medical services for ontario hydro

## dr. grant talks about retirement

People are living longer all the time. The proportion of citizens over 65 is always increasing, proving that science in all its forms is succeeding in efforts to keep us going. There's every reason to expect the trend to continue.

Aging is, after all, synonymous with living and therefore is a good thing. But while advances in medicine, sanitation and the like keep us alive, living is more than existing. So the trick is not so much adding years to life as it is adding life to our years.

Because of mechanization, retraining and so on, today's worker worries less about economic survival in the later years of working life than his father did. But while the problems of the over-40 employee aren't fully solved, more attention can and should be paid to what happens after a career ends.

We call it "retirement" — and that's part of the problem. The very word means to withdraw, retreat, or go to bed; it has a connotation of surrender, of resignation and apathy. These are the very things it ought not to mean, and need not mean.

This most drastic change in life generally occurs at age 65. For all the argument there has been about fixed retirement age, there is much in its favor. It permits retirement with dignity and recognition, without the need to tell a man he is no longer needed. Its predictability helps avoid the half-alive inactivity of the rocking chair by making sound planning possible.

Preparation is vital. The sudden appearance of this major gap in life can leave the unprepared employee gazing on a pasture that is flat, dull and uninviting. Idleness feeds on itself, depletes energy supplies, slows down the body, and can interfere with proper sleep.

The older person's world may constrict, leading to l liness as well as boredom and, worse, a loss of purpose in One requires a sense of satisfaction or achievement and out this, life may become a hollow, meaningless shell. Ar the cruelest sensations in older people are feelings of reje and uselessness.

But if we make full use of foresight, we can profit second wind which will make the second mile an exhilir and often a profitable experience.

It starts with health. Health in its broadest sense is con physical, mental and social well-being; it is far more tha absence of disease. Physical health makes possible the kinds and these, in turn, help to maintain bodily health. and soul are inseparable and interdependent.

Singling out physical health, this too can be planned. P diet, rest and exercise — starting now — contribute to general health, still our leading defence against disea program of annual check-ups from age 40 on, and adhe to the advice given at each, is another excellent prepa for the second mile. After all, there are no mechanical d and very few animals which reach 40 without some thing going amiss.

Much less gradual than bodily change is financial cl but here again planning can help ensure a brighter retire It's wise to begin with a review of possible income supple to meet the needs of retirement. After assessing benefits expected from Canada and company pension plans, s mentary programs should be considered. Among th sources of counsel are personnel officers, bankers and unions.

Financial planning is bound up with many other asp the new mode of living. It helps make possible the pur

se activities which most appeal to the individual.

Activities should be purposeful, and not undertaken just to time or for the appearance of being busy. They should be ored to one's health, abilities and resources. Even with unteer community work and hobbies, preparation is pos-, and occurs naturally if one has been interested in a given vity prior to retirement. Or one can, from time to time, try ething new.

art-time employment can provide more than extra income. rt from contributing to a feeling of worth or independence, n result in replacements for former working associates and ds. If at all possible, it's wise to choose a job without a time schedule, such as consulting, selling, caretaking or ening — any job which is of real interest and rewarding.

with hobbies, community service and part-time work, quarters and travel ought to meet the true needs of the idual. Generally speaking, it is felt that a person should in familiar surroundings and among long-time friends ssociates — again, because the degree of upheaval should nimized.

l, many happy and successful people have retired to different environments for reasons of health, comfort n a simple change of scene.

night help to assess the degree to which one has been a -body". The man who dislikes travel at 40 probably enjoy it much at 66. Nor is there any reason to believe quiet, introspective person who doesn't go out much ddenly become a gay extrovert after leaving the job.

ll these matters, it's best to include the family in plan- These are the relationships that can change dramatically ll for changes in the patterns of family life. Paramount the marital relationship; it, above all, can make retirement a continuous source of pleasure and adventure.

A retired man's wife does not retire! Indeed her work and problems may increase because her husband is now home and "underfoot" continuously. This change in relationship may require profound readjustment.

Nor is it solely the constructive attitude of one's wife that is of primary importance. All of us in society — including or perhaps especially the man who is retiring — need some improved attitudes. Understanding of each other's problems, needs and feelings together with a generous flavoring of "give and take", are fundamental to our welfare and to a happy marital relationship.

I cannot agree with those who say that people should work in industry until they are simply no longer able to do so. We must develop a new conception of non-employment and of leisure, and anoint them with some of the dignity that too many of us ascribe only to work. There is a real need to educate our people from an early age that there are other occupations and avocations than organized industrial work which are worthwhile, rewarding and productive in our community and in our social system.

Man's intelligence, projected into the many modern miracles of mechanization, electricity, manufacturing and the arts, including modern medicine, have combined to prolong the lives of our people to ages once unattainable.

It is time to turn this massive structure of intelligent study and work to the problems of our growing numbers of senior citizens. Our ultimate goal should be creative aging, and this can only be achieved by the concerted efforts of an enlightened and concerned populace. The problem is both sweepingly universal and highly personal, testing our avowed belief in the dignity and worth of the individual. □

# Gourmets around the world acclaim Ontario cheddar as exports boom. Like other areas of agriculture the cheese industry is centralizing.

Along with the little red school house, the picturesque one or two-man cheese factory is fast disappearing from the Ontario rural scene. Although cheese-making methods in modern gleaming plants are becoming increasingly sophisticated, the basic techniques are little changed from the industry's beginnings more than a century ago.

Legend credits a nomadic herdsman carrying milk in a pouch made from a calf's stomach with discovering one of the basic principles of cheese making. The natural content in the lining of the pouch — known as rennet — combined with the sun's heat to separate the milk into coagulated curd, and watery whey.

Ripening and curing cheese is said to have originated from changes which occurred in the sour milk curd co-incidentally stored in caves under conditions favorable to the growth of various micro-organisms.

The isolation of communities resulted in the vast number of types and varieties of cheese available — much to the delight of successive generations of gourmets. Certain countries, or even areas of countries, became known for special varieties of cheese, although these varieties are now made in many other countries.

Cheese-making skills came to Canada with 17th Century French settlers who produced a "soft" variety still available in parts of Quebec.

United Empire Loyalists later introduced cheese making to the St. Lawrence Valley and Lake Ontario region. Milk was converted on farms into cheese for home use or barter, as well as a means of storing dairy surpluses. As early as 1801 excess cheese was exported from Kingston to the United States.

While some 45 varieties of Canadian cheese are said to be available today, cheddar — the traditional cheese taste of English-speaking countries and originally made in the English village after which it is named — accounts for about 90 per cent of production. All but four per cent of it is produced in Ontario and Quebec, the lion's share in Ontario.

Canadian cheddar, as it is distinctively known, is frequently said to be an improvement upon the English product when considered in terms of local conditions. On the British market, good Canadian cheddar normally earns a considerable premium over other imported and domestic cheeses of similar type. Perhaps the ultimate in kudos, it has even been sold over the counters of stores in Cheddar itself!

Use of raw milk — distinct from pasteurized — plus proper curing, is said to give Ontario cheddar its unique tang. For differing palates a certain amount of milder cheese is made from pasteurized milk, but there is no exp demand.

Major steps in cheddar cheese making clude setting the milk, draining whey, "ch daring", milling, salting, pressing and ripeni

In the critical cheddaring step, strips matted curd are stacked to assist in eliminat whey — a process which also assists in form close-grained texture, and improves the k ing quality of the cheese.

Curing time varies from three months u two years or more. During the ripening pro cheese undergoes complicated bacteriolo and chemical changes which contribute to lowness and flavor. As a quality incentive Federal government offers a premium cheese scoring top marks under its gra system.

Ontario's cheese industry is centered i western and eastern counties. The openi 1864 of Canada's first cheese factory nea village of Norwich, in Oxford County, not marked the beginning of Ontario's chees dustry but the expansion of dairying gene Eastern Ontario, however, is Ontario's cheese-producing area — with Stormont Prescott counties leading in volume.

Cheddar manufactured in Ontario re under the control of the cheese milk prod until sold to the trade. Representing the ducers, the Ontario Cheese Producers' M ing Board, comprising members first elec county level, operates cheese exchang Belleville and Stratford.

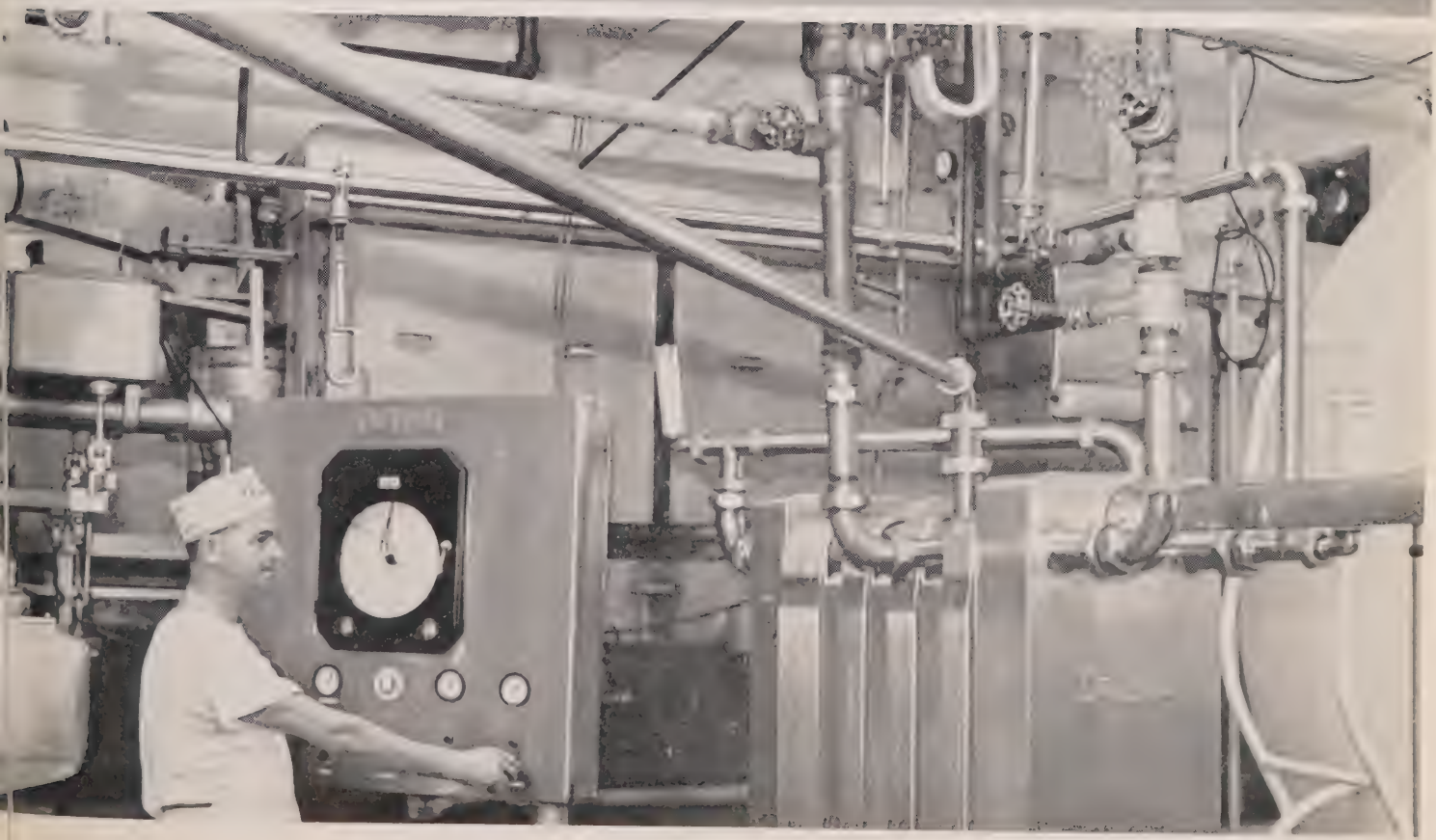
"Not too many years ago you seldom led on a concession road without pas cheese factory," recalls J. A. Johnston,

by PAUL CHISHOLM




*Manual effort still ha in cheese makin the many application tricity. Mixing, cooling and pumping e are part of modern o*







*From arrival of milk at the factory to shipping out of the cheeses, rigid quality control is maintained. Critical steps include acidity testing and the cheddaring process which helps give cheese its distinctive texture and taste.*

tary-manager of the board. "Like other areas of agriculture, the cheese industry is centralizing into larger units. At the beginning of this century there were 1200 cheese factories in Ontario, half as many by 1950 and less than 130 today. As farms amalgamate, the number of producers is declining too."

Cheese production in Ontario has increased by approximately 80 per cent in the last 10 years and exports have risen 130 per cent. Of nearly 77,000,000 pounds of cheddar produced last year, more than 30,000,000 pounds were exported. The bulk of the Ontario exports go to Britain, but lesser amounts are shipped to the U.S., the West Indies, Africa, South America and parts of continental Europe.

Approximately 50 per cent of Ontario cheddar is bought by processing corporations who cook, blend and further flavor it. Process pasteurized cheese, incidentally, was largely developed early this century by Canadian-born James L. Kraft, founder of the U.S. company bearing his name.

Cheese factories in Ontario are either privately owned, producer co-operatives or operated by corporations.

Typical of the modern Ontario operation is Harold Elliott's highly-mechanized Foxboro Cheese Factory, seven miles northwest of Belleville. A veteran of 28 years in cheese making, he and his staff of 11 guide milk supplied by some 12 producers through each step in turning it into cheddar.

Daily milk deliveries to the factory range from a low of 3,200 gallons to 11,400 gallons at the peak of the season. It takes approximately one gallon of milk to produce a pound of cheese and the factory ships out more tl 1,000,000 pounds annually.

Milk supplies to the Foxboro factory w formerly handled by no less than seven sma operations. Surpluses from dairies as far af as Toronto are also made into cheese.

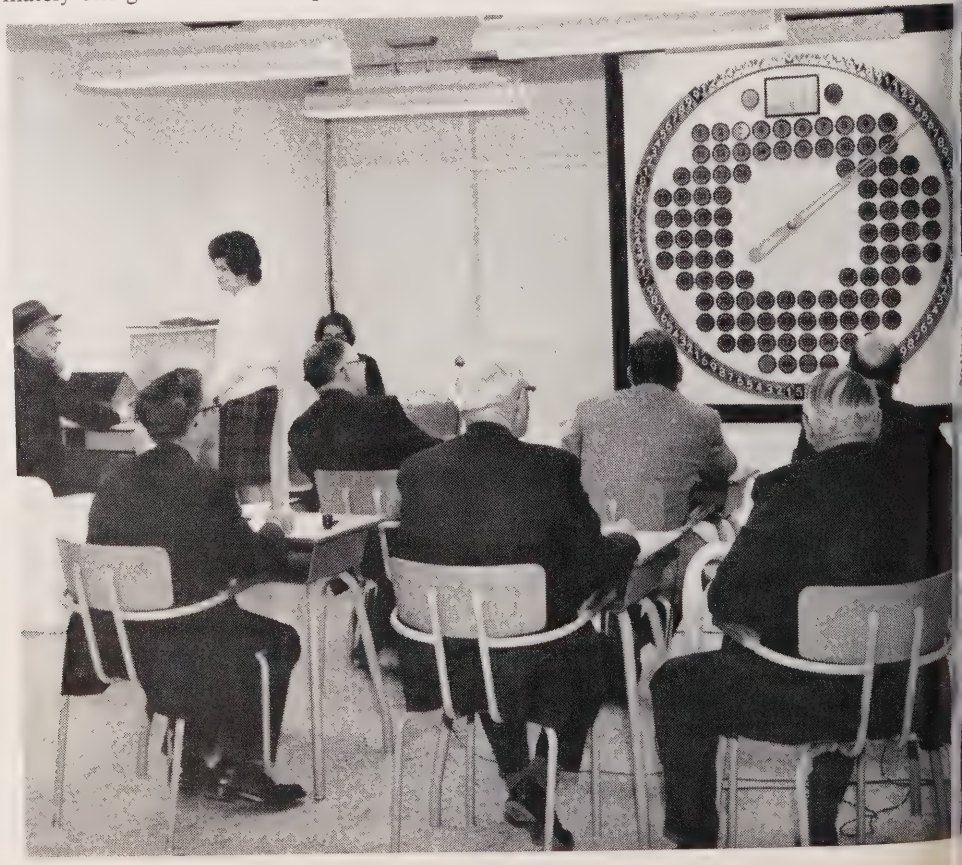
On arrival, milk is inspected, as is custo ary, by smell. At weighing, samples are ta from each producer to determine fat cont on which later payments will be based. R tine checks are made for bacteria and sedin and after passing through a clarifyer to rem dust particles, the cheese-making pro begins.

Stimulated by the varying cheese taste immigrants plus a growing appreciation cheese by Canadians, the industry in re years has launched into such varieties as Sw Brick, Romand, Parmesan, Blue Camem and Limburger — all once classed as exo

"Much of the specialty cheese made in tario (more than 9,000,000 pounds in 19 is of excellent quality and can compete similar products made in foreign countr according to evidence heard by an Ont milk industry inquiry earlier this year. ported specialty cheese sold in Ontario ann ly totals approximately 15,000,000.

Canadians eat an average of about pounds of cheese annually but are not h consumers by European standards — n three times as much in France and 21 po in Scandinavian countries, for instance.

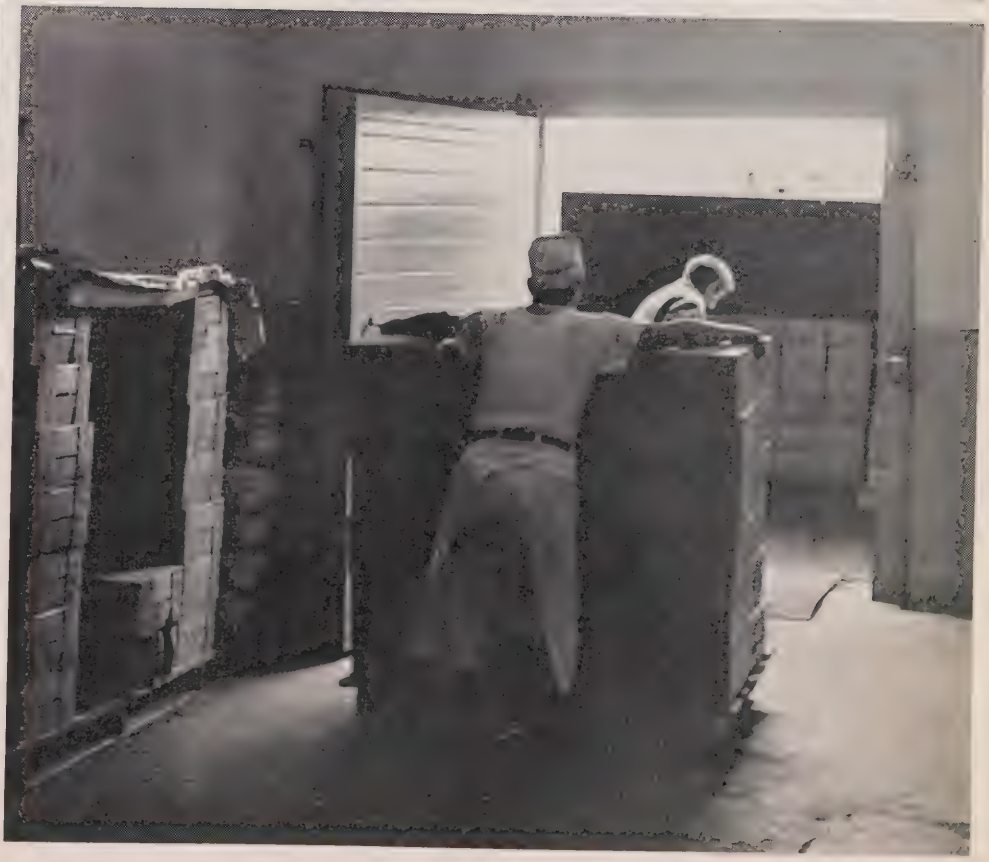
Per capita consumption is on the rise, ever, and has more than doubled in the 15 years. Aiding, perhaps, is the advice o cheese promoter: "Applie pie without cheese is like a kiss without a squeeze."



*Cheese sold at Belleville exchange of Ontario Cheese Producers' Marketing Board is auctioneered under electronic "Dutch Clock" system. By pressing buttons at their desks wholesalers and other buyers stop the clock at price level at which they are prepared to buy.*


PRESURE





# hydro reports important progress in the fight against costly vehicle corrosion

To some minds, sand and salt conjure up thoughts of white beaches . . . warm lapping oceans . . . the soft caress of trade winds. But not to Ontario motorists.

To them, this spicy mixture, liberally spread on traffic arteries to keep them open throughout the winter, stands for ice, snow, and hazardous driving conditions. It means constant trips to the car wash in an attempt to stave off the disastrous effects of road brine.

The extent of salt damage to roads, sidewalks, bridges, parking garages, as well as to vehicles is astronomical. And while salt's ravaging effects can be reduced by adding inhibitors, cost has so far been a powerful deterrent to their use.

Undoubtedly, the use of salt greatly facilitates the movement of traffic, but in the process it eats up millions of dollars worth of metal. One authority has claimed that salt causes $100 damage per vehicle annually, when deterioration is taken into account. For large fleets, such as Ontario Hydro's, the cost can run into many thousands of dollars.

Summer, unfortunately, is almost as damaging to vehicles as winter. Cautions E. J. Finucan, transport engineer in charge of Hydro's 1,600 vehicles: "Rain and calcium chloride, which keeps road dust to a minimum, has the same effect as rock salt and water. Atmospheric pollutants, some natural soil chemicals and humid weather causing condensation at night, all contribute to metal corrosion."

Mr. Finucan emphasizes that rusting can also start inside a vehicle in the narrow, poorly ventilated areas which collect moisture. Inside doors, for instance, in rocker panels, and in spaces down behind headlights.

It was the need to protect the entire lower portion of vehicles — not just underneath — that finally led Hydro to its present method — a sprayed-on blended wax-base material.

Standard asphalt undercoating was used until 1954, but this so-called protective was found to actually contribute to corrosion. Under extreme cold, the asphalt cracked. Water and brine which seeped in literally rusted its way out.

For the next five years, Hydro vehicles went unprotected. Then in 1959 a commercial rubber coating was investigated which could be sprayed on exposed underbody and fenders. This coating was extremely flexible and "gave" with the vehicle's movable joints and panels. Rubber offered a high degree of protection, even up to 100,000 miles of operation. But the application was both difficult and expensive.

In 1962, it was noticed that some of the first vehicles treated with the rubber undercoating were corroding from the inside out. Rust marks appeared on rocker panels, in lower portions of door panels and on cowl panels. On specialized line and forestry trucks, corrosion was apparent in tool boxes and equipment compartments.

The quest began for an effective anti-corrosive agent not only for the underside of vehicles, but which could also be easily sprayed into internal and hard-to-get-at lower areas where it would dry into a hard protective finish.

Hydro chemical researchers were meanwhile watching experiments being conducted by Michigan Bell Telephone Company. This utility was spraying petroleum-based soft oil compounds into vehicle doors and lower regions as well as using it as an undercoating.

Hydro's chemical researchers launched tests of their own on commercially-available undercoatings. Four types of materials were chosen including oil-base, wax base, asphalt and rubber base. The compounds were exposed to temperature shock tests which ranged from 130 degrees to –40 degrees (farenheit) to detect coating softening or cracking points. Other experiments determined flexibility, and abrasion resistance of the materials, and measured the effects of various corrosion-causing substances.

"Wax-based coatings were found to be the best," states J. W. Suggitt, head of the organic chemical section. "But to obtain the ideal material to suit our purpose we had to blend both hard and soft waxes."

Concurrent with the laboratory tests, vehicles in the field were treated with soft oil undercoating. Others were sprayed with the blended wax. Again the wax blend proved to be the best protective agent.

"The wax blend, which is less expensive than rubber undercoating, is easily applied and the vehicle is ready for the road in four hours," says Mr. Finucan. "Using airless spray equipment in our workshop makes the whole operation less messy. To get at some of the tight places, small holes are drilled in door panels. We use a thin, flexible spray wand."

However, Mr. Finucan warns that new vehicles should be treated upon delivery, before the metal has had a chance to pick up any rust-producing agents.

Hydro hopes that this protective coating, which is also available commercially, will increase the life expectancy of its expensive, custom-bodied vehicles to 10 years. Meanwhile, a close eye will be kept on new developments because rust proofing, like air defence, is always improving. □

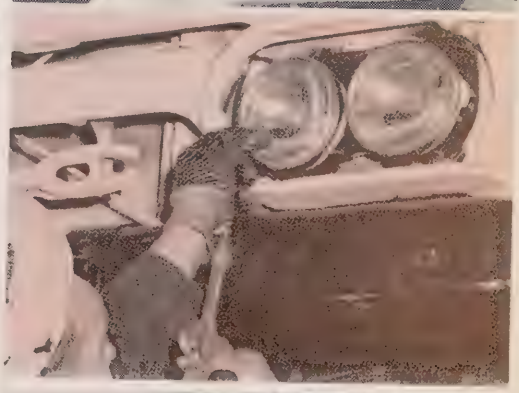


*At the A. W. Manby Service Centre, George Blume sprays the blended wax rustproofing on the underbody, under the hood, in door frames, around headlights and in rocker panels of new personnel carrier.*











# rusty thinking

by DAVID POPE
manager
Sandwich West
Hydro System

I only hope Dr. Robert Hay knew what he was doing when he got up before the AMEU conference at Queens University last June and issued a plea for more humor in Hydro. It seems to me there is plenty of kidding around right now without the OMEA president egging anybody on to greater efforts.

Don't get me wrong. I don't mean we ought to make a federal case out of the three field mice let loose in the ladies' room last Friday.

All I'm trying to say is funny business of that kind doesn't need any encouragement, especially from senior officials like Dr. Hay. Call me a killjoy if you like, I still feel the responsible people in Hydro should make it very clear they frown on this sort of thing—just as they frown on the practice of dropping those darn water bombs out of the drafting room window, putting wads of cotton soaked in Nuit de Passione into the air conditioning system and sending the new lineman chasing all over town after double-barrelled ratchet springs and hypertensile micron slugs.

Pranks such as these waste a lot of time. And time these days is money. It didn't used to be but it is now.

Then there is our public image to consider. The boys in the line department got lots of laughs out of decorating the flagstaff with that pair of lacy black watchamacallits, alleged to be the property of Angela McCormack in commercial and power billings.

But the Loyal Order of the Daughters of the Flag didn't think it was so darn funny. You could tell that from the tone of their letters to the newspaper.

Things are admittedly a little easier now but the Daughters still aren't completely settled down. I believe it will take two or three Hydro cooking schools before we can safely say we are back in their good graces. As far as Angela goes, I doubt if she will ever be the same again.

On the other hand, Dr. Hay may have had something quite different in mind when he put out his call for more humor. He may have meant anecdotes.

If he did then he is still on fairly tricky ground because, even though a few of us can do proper justice to a good joke, a lot of Hydro people can't tell them for sour apples. They just don't seem to have the hang of it.

Probably the most critical mistake in storytelling (not counting that business of getting to the end of a joke and then forgetting the punch line) is failure to observe my First Law of Office Anecdotes. This law states:

"The impact of any humorous story is direcly proportional to the executive position of the storyteller."

Now this is obvious, but you would be surprised how often it is forgotten. I have, on occasion, overlooked it myself and my ears burn even now when I recall a joke I once told as a junior engineer with Ontario Hydro.

There was this baseball scout (the story went) who sent a frantic telegram to his manager about a young pitcher he had just seen strike out 27 batters in a single game. There were no walks and the best the oppo could do was get one foul ball. He asked mission to sign the pitcher up.

"Forget the pitcher" his manager back, "and sign up the guy who got that How many times do I have to tell you what we need around here is hitting!"

Now I'll admit this isn't the best jok ever got told in a Hydro office, but it isn worst either. Out of five listeners, I thou was entitled to a couple of chuckles.

What happened was three of them just ed away and the fourth asked me whe punch line was coming. The fifth sai manager was crazy not to sign the p The way he figured it, a ball club now can use all the good pitching it can get alt he said a real hot twirler like that is lia have a glass arm. You can't always b about these speedballers. He said there case like this with the Cleveland Indian around 1950.

A couple of days later the regional m used the exact same story to reduce a gr employees to helpless, heaving hulks, s them clutching the sides of their desks, ing with laughter, others rolling on th gasping for breath while tears coursed their cheeks.

Shortly after that I resigned my p with Ontario Hydro.

When I became manager of Sandwic Hydro I noticed an instant and spec improvement in my ability to tell jokes

# it's no laughing matter dr. hay

here I developed my Second Law of Office
cdotes, which states:
The reaction that may be anticipated from
ven story is inversely proportional to the
th of service of the listener."
his one is important too. Long service
ans simply do not make a good audience.
lly worth wasting your time on. They seem
se their sense of humor as they develop
eling of job security. Rookie employees
asily the best, particularly if you can get
em in that delightful probationary period
e they join the union and read all the fine
in the collective agreement.
on't want to brag, but you should see me
I succeed in rounding up a few of these
omers to listen to a good shaggy dog story,
ially if it's one that gives me scope for
omic German dialect. Honestly, it's a riot!
other point to remember is that salesmen
ot to tell stories to the staff. If they have
ood ones they can tell them to the man-
nd he will pass them on. Dr. Hay ought
e made this quite clear. But he didn't.
n again, for all I know, Dr. Hay's re-
may have been intended for the com-
ners, the elected people of Hydro. It's
ossible that one of these evenings your
an will come in a little late, drop his
se on the boardroom table and start out
ng that a funny thing happened to him
way to the commission meeting.
t luck it may never happen. But if it
t least you'll know who to blame. □

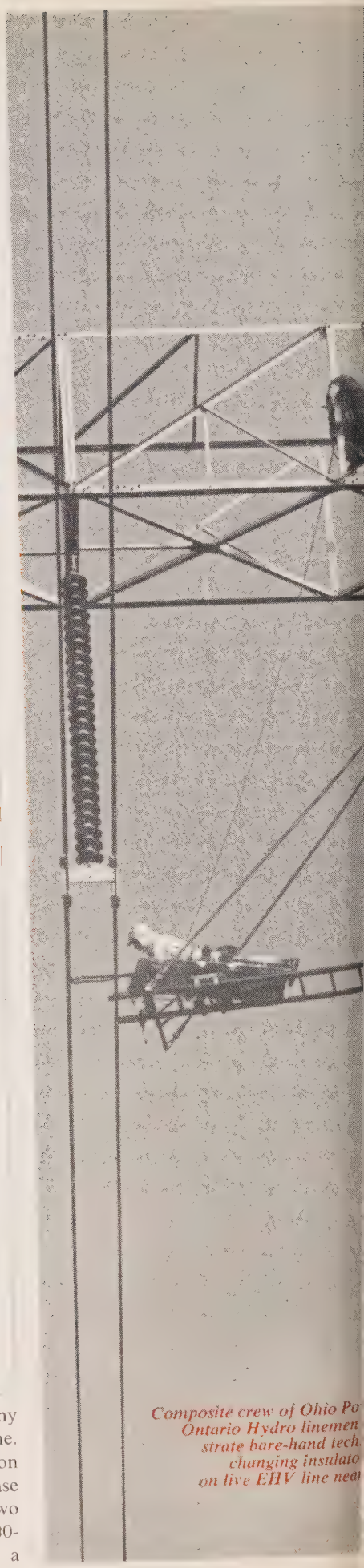
# aerial artists

**techniques for maintaining the flow of ehv power include bare-handling 500,000 volts**

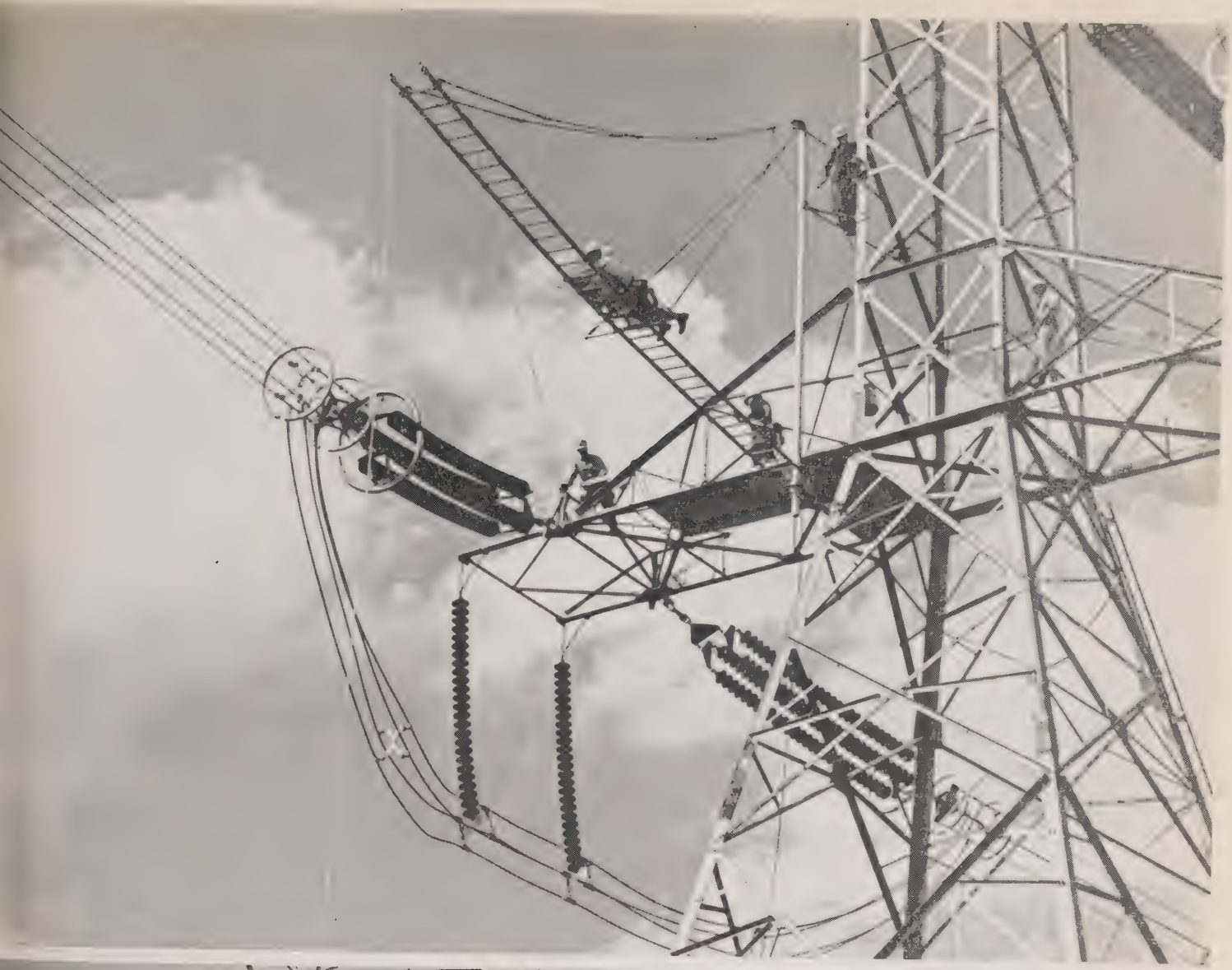
Etched against a blue sky, the man in the metallized suit inched his trolley cage along a ladder perched high in an EHV tower and reached for a live 230,000-volt line with his bare hands.

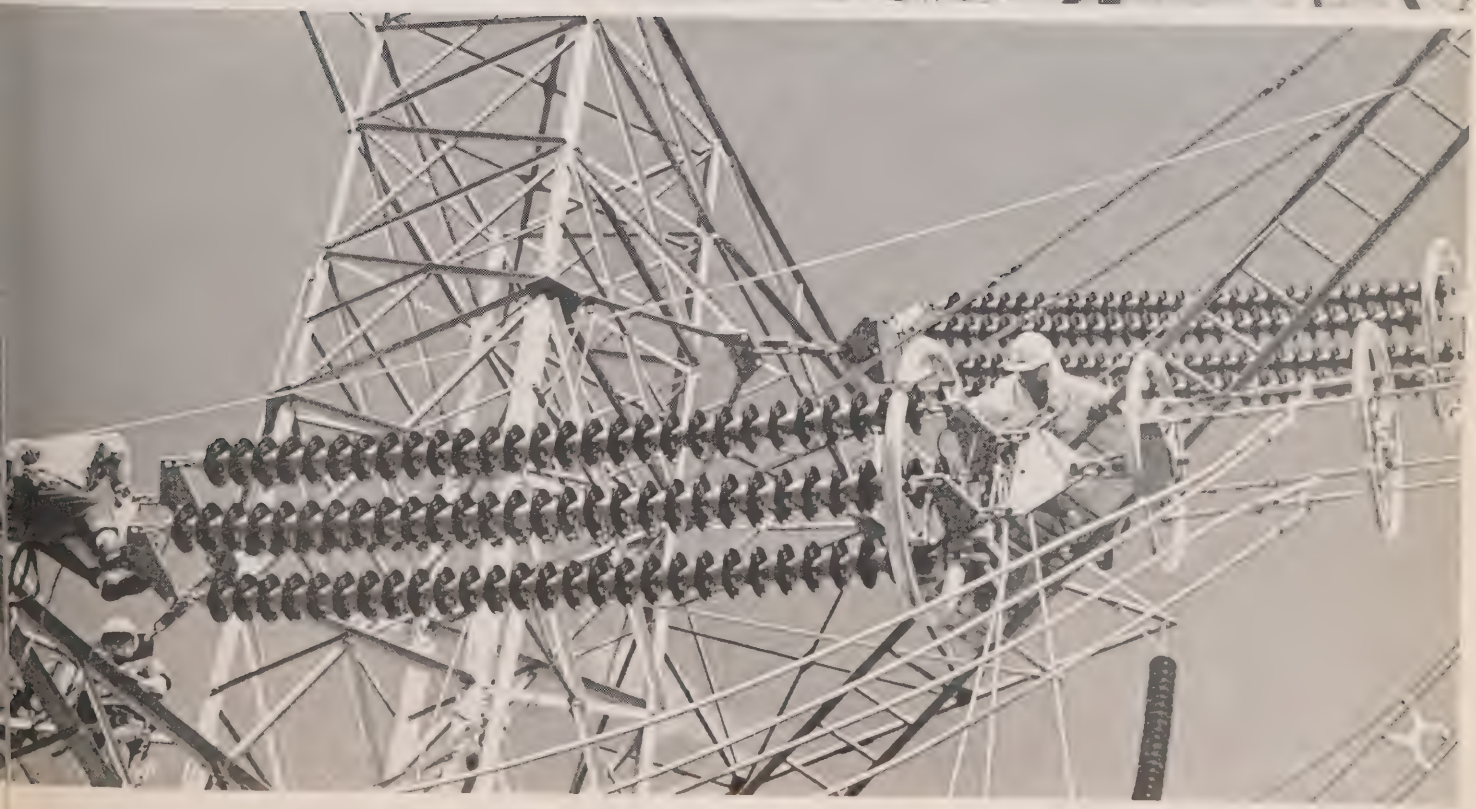
Power crackled and scores of onlookers nearly 100 feet below sighed in relief. Jack Roberson, a short, wiry Ohio Power Company lineman, had "bonded" his suit to the hot line.

It was all part of a three-day demonstration on EHV maintenance techniques and this phase was carried out by two Ontario Hydro and two Ohio linemen. It involved changing a 400-pound insulator string with bare hands on a

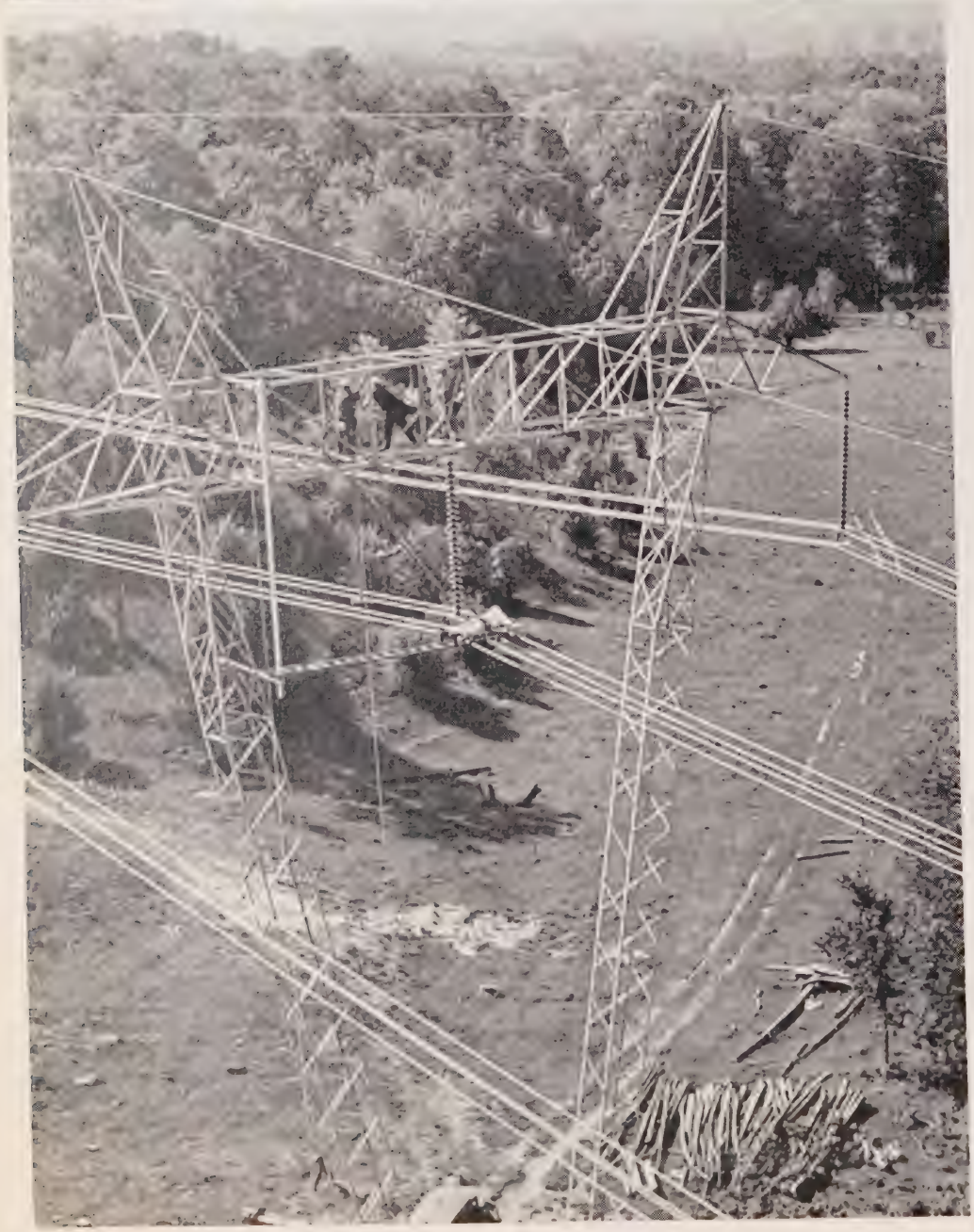


*Composite crew of Ohio Po Ontario Hydro linemen strate bare-hand tech changing insulato on live EHV line nea*









V-shaped tower near Barrie. Among the v
nesses were visitors from utilities in Queb
British Columbia, New York and Virginia
well as Hydro line maintenance, research
engineering personnel.

Hydro plans to use a combination of l
line tool and bare-hand methods to main
the vital 440-mile power pathway when i
stepped up to 500,000 volts next year. And
Commission is swapping its own research
knowhow with other utilities involved in ex
high-voltage transmission with a view to
minating maintenance interruptions on a
which will carry enough power to supply
combined requirements of Sudbury, Lon
and Ottawa.

Continuity of service on EHV can be equ
with cash. A one-hour interruption would
a price tag in the neighborhood of $2,000
the cost of replacing hydro-electric power f
four stations in the James Bay watershed
energy from a coal-fired plant.

Hydro is well prepared for bare-hand v
on 500,000-volt lines. In recent years its
men have used this technique successfull
voltages ranging from 8,000 to 230,00
various parts of the province.

But Hydro engineers still face challeng
servicing many sections of the EHV line
cause much of the rugged terrain is inacces
by truck, reports Tom Burgess, line m
tenance engineer. He says the use of tr
cars to travel along conductors, spec
equipped tracked vehicles and helicopte
get linemen into working position are all
studied.

Special lineman training is also necessar
a job that requires skill, agility and s
nerves.

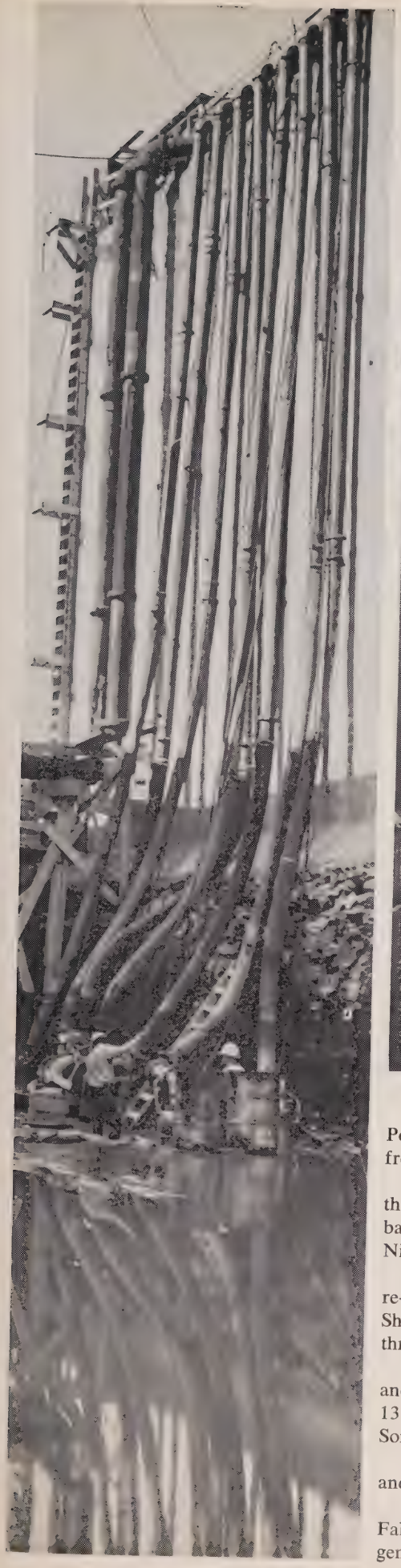
In one of the demonstrations at Bar
Hydro crew, using live-line tools, complet
insulator string change on a V-shaped
surprisingly fast — one hour and six mi
They also demonstrated a similar operati
a heavy anchor tower installed at an an
the line.

The key man sits on an insulated l
projecting from the tower. He disconnec
insulator assembly with a 16-foot "hot s
Then the crew manoeuvres the heavy
shaped string of insulators along a trolley
attached to the tower crossarm.

How does it feel way out on the ladder
foreman Doug Hogan, of Sudbury, who'
working on EHV line maintenance since
ary: "It's all in a day's work."

*These aerial acrobats operate l*
*above ground on EHV line en*
*at 230,000 volts. Left to right: Bob*
*Sudbury; Jack Roberson*
*Ed Jylha, Sudbury and Ron Wild*

# successful surgery





**This vital artery was tied off twice before circulation was restored.**

Power canals and movie stars may be oceans apart in most respects but both can benefit from a competent face-lifting when they reach the forties.

Such was the case with Hydro's Chippawa power canal. Under the surgeon's knife for the last two summers, the canal underwent a successful series of operations and is now back at the task it commenced 44 years ago — delivering water to the Sir Adam Beck Niagara generating stations.

The canal was first closed in 1964 for deepening, widening and general repairs. It was re-opened last winter to meet peak demands for power and pumped dry again in the spring. Shut-down of the Beck stations was unnecessary because they draw most of their water through twin, 5½-mile tunnels passing under the city of Niagara Falls.

During the face-lifting, more than 1,800,000 tons of earth and rock were excavated and about 120,000 tons of concrete placed. The 8½-mile canal was deepened by up to 13 feet in places and the upper rock walls treated with concrete, blown on under pressure. Some 550 men were employed on the project this year.

As a result of the work, water flow has been increased by 6,500 cubic feet a second and output of the Beck stations boosted by a valuable 11 per cent.

Enlargement of the canal does not affect the amount of water passing over Niagara Falls. The additional water is diverted from the older Ontario Power and Toronto Power generating stations which will continue to operate when water is available. □



# district 1 meets at picton

A two-pronged attack on recommendations which would abolish elected Hydro commissions and have their functions administered by committees appointed by municipal councils, highlighted a series of resolutions at the annual meeting of Eastern Ontario Municipal Electric Association.

Attended by more than 100 delegates, the Picton meeting endorsed a protest resolution passed earlier by other OMEA districts, and added another salvo. The second resolution demanded the reasons for the recommended changes in Hydro administration which were contained in the Murray Jones report on the study of regional government for the city of Ottawa and Carleton County.

Harry Hargreaves of Nepean Township, one of the areas studied in the Jones Report, said that not once does the document give reasons for its recommendations. Describing its contents as "utter garbage," he called for a meeting of the OMEA executive with Municipal Affairs Minister J. W. Spooner for an explanation.

OMEA president Dr. R. H. Hay, Kingston, revealed that the executive is already endeavoring to discuss the report with Mr. Spooner, and if possible, Mr. Jones.

Among those taking part in the discu
W. Ross Strike, chairman of Ontario H
declared that Ontario's local governme
up under the Municipal Act is unique n
in Canada, but in the Western Hemisph

"Elsewhere, Ontario is envied for its M
pal Act which clearly separates revenu
ducing services, such as Hydro, from
services in a community which are ta
ported," he said. "Many communities
Ontario are in trouble because throu
years money was not spent in the areas
it should have been. Today these comm
face heavy expenditures which they
handle."

Mr. Strike said that the trend to r
government is partly due to the rapid
sion of municipalities. Suggestions for r
government have mainly been made b

*Refurbished arc lamp donated to Hydro's historical collection was a point of interest at Picton meeting. Admiring the lamp are Lt. Col. A. A. Kennedy, Ontario Hydro commissioner and Dr. R. H. Hay, OMEA president. New District 1 executives, seated, are: J. R. Philips, Brockville, president; and L. A. Wadell, Lindsay, past president. Standing, left to right: C. A. Baker, Trenton and R. K. Elliott, Deep River, directors; H. F. Baldwin, Oshawa, 1st vice-president; and L. L. Coulter, Ottawa, director.*



and it is the responsibility of commis-
's to take an active part in efforts to
at the best form of administration.
t out and serve on committees studying
ipal government in your areas," he said.
that the public utility commission sys-
the province be retained. The man in
reet is not always fully aware of its
ance, but it is something very worthy
ervation."

need for an apprenticeship training
m for Hydro linemen was discussed at
by the meeting after Whitby PUC dele-
outlined recent difficulties in obtaining
aff. It was pointed out that because
ient young men are entering the trade,
ility competition for linemen could

rio Hydro was called upon to investi-gate instituting such a training scheme so that both Hydro and the utilities would have a pool from which to draw staff.

Hydro and OMEA were urged in another resolution to investigate ways to solve the problem of existing overhead wiring in new subdivisions where underground systems are mandatory. J. Richardson Philips, Brockville, said that subdivision property in a recently-annexed area of his city is traversed by a Hydro feeder line. It is essential that all wiring conform with the regulations, he declared.

Mixed reception met a resolution by Deep River PUC which sought a study by AMEU of the effect on power demand, and the cost to municipalities, if daylight saving time were introduced year round. It was passed by a narrow margin.

Two resolutions from Nepean which would drastically alter OMEA parliamentary procedures were overwhelmingly voted down by the meeting. These sought to establish "write-in" votes by utilities absent from meetings, and a system of poll voting.

Dr. Hay said he believed the proposals were "a mistake for the future of the organization". Decisions at OMEA meetings are frequently reached only after considerable discussion. If municipalities are sufficiently interested they will ensure they are represented at meetings, he said. Dr. Hay pointed out that under the OMEA constitution poll votes are permitted on matters of policy and finance.

In a presentation on load building, J. E. Riseborough, Oshawa, emphasized the need for uniformity of sales policies and billing procedures to eliminate many of the basic problems facing utilities. □



# along hydro lines

## ROAs Merging

Ontario Hydro's Uxbridge Rural Operating Area will be gradually merged with adjacent ROAs. In making this announcement, Adam Smith, Central Region manager, pointed out that the move was in keeping with the pattern gradually occuring throughout the province. By the end of this year, Ontario Hydro's original 105 ROAs will have been reduced to 82 larger and more efficient organizations. Centralization will save millions of dollars.

Amalgamation is being carried out so that more efficient use may be made of today's modern equipment, vehicles and work methods which make larger area organizations feasible. □

## No Accidents for 13 Years

The National Safety Council's Special Award of Merit was recently presented to Orillia Rural Operation Area for achieving one million man-hours worked without a "lost time" accident. This accomplishment was tallied up over 13 years by the members of the staff who were congratulated by Ontario Hydro commissioners R. J. Boyer and Lt. Col. A. A. Kennedy at a special dinner in their honor. Lt. Col. Kennedy observed that the achievement was equivalent to 15 men working for 40 years without a lost time accident. □

## Etobicoke Hydro Building

Work will start immediately on the construction of a $1,819,000 head office building for Etobicoke Hydro. In making the announcement, Hydro Chairman R. Clarke Wardlaw said that the four-storey, all-electric structure would be undertaken as a winter work's program with a target date for occupancy, November, 1966.

The new building will be located on the west side of Highway 27, adjacent to the township's municipal centre. Among its features will be a 50-seat auditorium where cooking and appliance demonstrations will be carried out. It will also be made available for meetings of Etobicoke community organizations.

The rear garden area will be visible through a glass wall in the lobby including a view of an impressive rock-formed waterfall symbolizing the province's rich heritage of tumbling water and hydro-electric power.

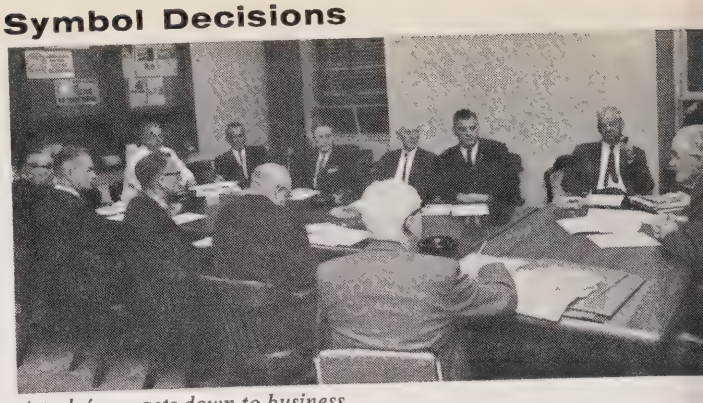
The commission's overcrowded Dundas Street headquarters have been sold for $490,000, considerably more than was originally paid, and this will be used to help pay for the new structure.

All trucks and emergency crews will work from the service building on Kipling Avenue. □



*New look for Etobicoke.*

## Symbol Decisions



*A task force gets down to business.*

Several important decisions on implementation were made at the first m of the joint OMEA-AMEU-Ontario Hydro Symbol Task Force, held recen Toronto.

They included an interim arrangement which will enable utilities to ma of the symbol on vehicles which are not due for repainting for several In these instances, it was agreed, the orange and vermilion symbol co used on a white background patch as a temporary measure. When the ve came up for replacement or repainting, the color would be white.

Sketches of proposed symbol patch applications are being prepar consideration by the task force.

The need for individual registration on the part of the utilities planning the symbol was also discussed. It was explained that the OMEA co register on behalf of all Hydro utilities as it was an association, not corporate, and because the utilities were distinct legal entities, not subs of the OMEA. The task force was satisfied that every legal effort had bee to avoid the need for individual registration.

Although both the OH and UH symbols are available for utility use, t force strongly recommended that the OH, representing Hydro in Onta used to strengthen a unified image. It also recommended that the wo Hydro Utility" be used in the "cord" position with the OH symbol and w name of the utility placed elsewhere.

Task force members shown at the meeting are, clockwise: J. A. Blay, Hydro; Dr. V. S. Wilson, Etobicoke Hydro; Harold Brownhill, Niagara Falls H. J. Murphy, Barrie PUC; Stanley Webster, Tillsonburg PUC; H. J. Ontario Hydro; W. R. Mathieson, AMEU; J. B. Brown, Ontario Hydro; Stu Midland PUC; Dr. J. E. Wilson, Barrie PUC; W. E. Edwards, Sudbury Hyd Burbank, Toronto Hydro and Dr. R. H. Hay, Kingston PUC.

# municipal briefs

**Electric League of London** scored a hom connection with this year's United App paign. The league designed and donated sign which was erected at a downtown int to trace the progress of the appeal. It took the form of a ball diam lights along the base paths indicating donations to date as the fu toward home plate.

**Kenora,** in Northwestern Ontario, which owns its own distribution sy takes power from the Ontario-Minnesota Paper Company, has requested tion on the cost of power and a schedule of retail rates which woul the town decides to take power from Ontario Hydro on a cost contract

**D. A. Rolston,** manager of Strathroy PUC for the past 10 years, is mov the same position with Goderich PUC. He is replacing E. D. Weaver recently. Mr. Rolston is past president of District 7, AMEU, and a m the vehicles committee.

**Preston PUC** has exceeded the sales quotas it set for itself in commer heating, cooking, home heating and domestic water heating.

**Formation** of municipal Hydro systems in Nepean and Gloucester town depleted Ontario Hydro's Ottawa ROA by approximately 15,000 custo consequence, the remaining 6,100 customers will be served from adja and the Ottawa area closed, January 1.

**Roy Hicks, 75,** Windsor Utilities commissioner, died suddenly in Octo in community affairs, Mr. Hicks served on the commission from 193 and from 1957 until his death.

**All new apartment buildings** in London of more than four units will metered in the future. A. L. Furanna, general manager of London PUC the high cost of meter installations plus the increasing mobility of ment population had prompted the decision.

**Speaking** at the 10th anniversary dinner of the West Ferris Lions Clu

M. Graham, manager of North Bay Hydro, traced the origins of public power he province and described its present status. In a fanciful forecast of things come, he quipped: "The day may even come when Hydro will be accused of nging the weather by the use of rainmaking machines."

**ard Bowen,** Canadian General Electric sales representative for over 40 years, honored recently at a dinner party sponsored by Brampton PUC. More than friends in the municipal electric utility field attended the gathering at ch Dr. V. S. Wilson, Etobicoke Hydro, presented Mr. Bowen with a gift uggage.

**elock Hydro** distribution system has been converted from 8 kv to 12 kv. The k was carried out during the summer with little inconvenience to customers.

**lic utilities commissions** are in danger of losing their identities under ting plans for regional government, says Ray Pfaff, manager of St. Catharines . As reported in the St. Catharines Standard, he criticises a recommendation several Hydro utilities in the Ottawa area be dissolved and their affairs ed over to a works committee of a regional government. He thought this ld establish a pattern as regional government became widespread.

Local commissions are in no way opposed to regional government," he said, they are strongly opposed to revenue-producing utilities becoming mixed n any way with the tax-operated division of their respective cities. They feel only way proper administration can be carried out is through the separate missions."

**her year of progress** is outlined in the handsome, 54th annual report of Toronto Hydro-Electric Commissioners. The system's load reached a peak of 344 kilowatts in 1964, an increase of 2.88 per cent over the previous year. gy sales rose 4.23 per cent.

her 1964 highlights included a $2,330,000 underground construction ram — part of a continuing effort to reduce the number of overhead lines. of Toronto Hydro's load is now carried underground and it is hoped to have owntown lines underground in the next few years.

e number of street lights in the city and Leaside rose by nearly 4,000 ,863.

**Sprentall, 79,** died recently in Cooksville. He had been manager of ng PUC before retiring in 1960 after 50 years of service.

**an Baker,** formerly with the Bell Telephone Company, has been appointed ger of Stouffville PUC. He fills the vacancy caused by the death of r Daniels.

**stock PUC** is among the latest utilities to bring home the safety message hool children with Hydro's Hi-Line Hazard demonstration. The display was n to 4,000 of the city's elementary school pupils. □

## dro and Home Economics

's home economics equipment program, which has been aiding 700 schools e province since 1959, is now offering without charge a series of inform- pamphlets dealing with the selection, care and use of a wide variety of ical appliances. In the past, this program has placed electrical appliances classrooms through the co-operation of manufacturers, municipal electrical es and Ontario Hydro.

igned to supplement the home economics curriculum as set forth by the o Department of Education, the pamphlets have been reviewed by a r of specialists. This material is expected to aid the parents as well as achers and students. □

## l of Memory

l of Memory" will be established at Niagara Falls to commemorate the of electrical pioneers in Ontario and the advent of public power. This nial project will emphasize the role played by the municipalities.

gn, research and co-ordination will be undertaken by Hydro's Public Relations Division under the direction of a joint OMEA-AMEU Centennial Projects Committee.

The Hall of Memory will occupy some 3,000 square feet of floor space in the foyer of Sir Adam Beck Generating Station No. 1, pictured here. Once the largest in the world and a tourist mecca, this station has been closed to the public since 1954.

Displays will include a roll of honor incorporating the names of proponents of public power. □



minence for an old station.

## New Era for Chapleau



*Smiles for a full partnership.*

Chapleau's new transformer station marks the completion of facilities for the transmission of a plentiful supply of low cost power to the Northeastern Ontario community, and makes Chapleau Hydro a full partner with the other municipally-owned electrical utilities in the province, C. A. Smith, commissioner, declared at the recent opening ceremony.

The township was previously supplied by a small hydro plant and diesel generators.

Guests attending the opening ceremonies, along with Chapleau Hydro officials include: front row; left to right: C. A. Smith; A. B. Hayman, Northeastern Regional Manager, Ontario Hydro; Lt. Col. A. A. Kennedy, commissioner, Ontario Hydro; back row, left to right: E. C. Dash, Sudbury Hydro; T. C. Godfrey, chairman, Chapleau Hydro.

Reeve F. S. Card paid tribute at the ceremony to Chapleau's electrical pioneers for their service to the community. The transformer station was officially opened by Mrs. George Fife, wife of the late George Fife, who managed Chapleau Electric Light and Power Company from 1910 to 1955.

## Electrical Cooking Wins Out

The University of Alberta will install electrical cooking equipment in the new student union building. The decision was based on a recommendation of the university's director of food services who supervised a series of tests conducted under the watchful eyes of representatives of the gas industry, the electrical utilities and manufacturers.

The director, who has a bachelor of science in food administration and a master's degree in nutrition, made these observations:

- roasting by electricity is 33 per cent faster than by gas.
- electric kitchens are 16 per cent cooler than those employing gas. In commercial kitchens the difference can be greater.
- electricity is a cleaner source of energy.
- in oven cooking, convected heating resulting from the use of gas tends to burn and/or dry out the product more than electricity's direct heat.
- temperature control is more exact with electricity.
- long term analysis indicates the cost of equipment maintenance is less for electricity. A recent survey conducted for the American Hotel Association shows that depreciation of electrical equipment is only half that of other types. □

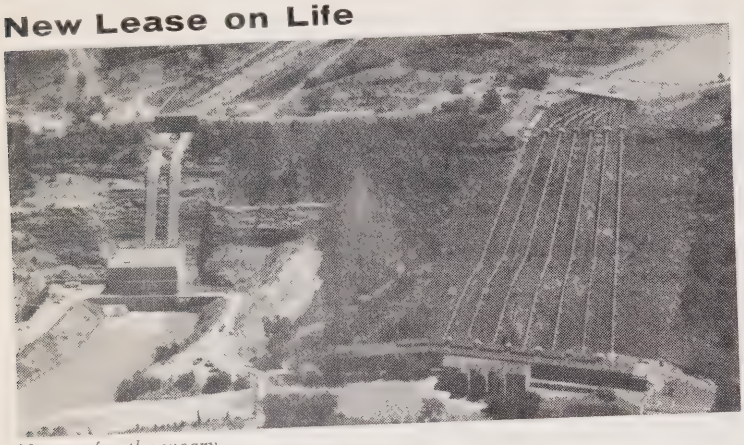
## Helicopters to the Rescue

Hydro helicopters came to the rescue on two difficult line construction jobs recently. In Hamilton, a six-and-one-half mile, 230,000-volt transmission line had to be built through King's Forest Park, and strung over carefully preserved trees. The problem was solved by using helicopters to carry the pulling lines over the trees. Tensioners kept the heavier cables from sagging into the branches. The line will help meet increasing loads at Hamilton Beach Transformer Station.

And in the Thousand Islands, a helicopter was used to place a 26-pole distribution line on one of the islands located a mile from the north shore of

the St. Lawrence River, near Gananoque. From a pole yard on the mainland, the helicopter airlifted crews to the island and then carried the 35-foot poles over, one at a time, setting them into position. The poles were already equipped with the necessary hardware. The whirly-birds were also used to transport heavy reels of conductor to the island. □

## New Lease on Life



*No rest for the weary.*

Ontario Hydro plans to rehabilitate its 67-year-old DeCew Falls No. 1 generating station, the oldest in the system. This decision should extend its life for at least another 15 years.

DeCew No. 1 has been in continuous service since November 1898 and was purchased by Hydro from Dominion Power and Transmission Company in 1930. The rehabilitation of the plant, to cost $79,000, will simplify operations and reduce fire hazards. The six main generators will be connected to serve as two, 16,000-kilowatt units. The other four generators will not be operated.

The old station, shown above, right, located west of St. Catharines on the Niagara escarpment, adjoins DeCew No. 2, which went into service in 1943. Together, the plants contribute a total of 155,000 kilowatts to the system. They draw water from the Welland Canal. □

## Tower of Light

The third tower to grace the Canadian skyline of Niagara Falls, the $7 million "Skylon", was opened recently by the Hon. John Robarts, premier of Ontario, and Nelson Rockefeller, governor of the State of New York. Located between the Oneida Tower and the Seagram Tower, the Skylon, at 520 feet, is the tallest of the group and offers a view of Toronto, Buffalo and Rochester.

The concrete shaft of the tower is topped by a three-storey dome housing a rotating 300-seat dining room, geared to make one complete revolution an hour. The dome also includes an observation floor with an open-air deck. At the



*Another tower for Niagara.*

base of the tower, a two-storey exhibit hall is located, which will eventually house a permanent display of science, industry and government.

At night, the Skylon, pictured above, takes on a jewel-like appearance bathed in the glow of 12-1,000 watt multivapor units. The dome is crowned by two rings of 200 watt incandescent bulbs in white globes. Three elevators operate at a speed of 500 feet a minute. □

## A Businessman Looks at China

James S. Duncan, a former chairman of Ontario Hydro, is also a student of world affairs. Through travels in Russia and China he has become an authority on Communism and has published numerous articles on the subject. His lat observances are in book form — "A Businessman Looks At Red China", p lished last month by McClelland and Stewart. In it he compares the econor social and political changes he noted between his visits in 1959 and last y

Mr. Duncan reveals a world of 700 million industrious and friendly pe living under the domination of an able but ruthless government. His b reviews the history of the rise of Communism in China and analyses the fai of the "great leap forward". The author also sheds light on the present econ recovery and the consequence of the Sino-Soviet split, resulting in a new p of self-reliance.

## Electronic Hands

Pierre Provencher is the only person in the world with two electronic ha Pierre lost his own hands in an explosion at Kingston last May when he two other youths were experimenting with a rocket. One of his compar was killed.

Today Pierre is living a normal life as a first-year arts student at the Unive of Ottawa. He can look after himself, wash and iron his own clothes and water-ski.

Pierre's new hands are connected to sleeve-like arms containing tiny trodes. The electrodes pick up minute impulses when he flexes certain muscles. These impulses are amplified and the signals used to control el motors in the hands.

Power is supplied by 22 rechargeable nickel-cadmium batteries susp in a belt around his waist. The hands were made in Russia and the sleeve electronic system built in Montreal.

Says Pierre: "Some day these will be better than human hands."

## Now There are Four



*Powerful aid for pilots.*

Airline pilots coming in to the Toronto International Airport now ha towering sentinels to guide their approach. Pilots have been using the 5 chimneys at Lakeview G.S. as landmarks since the project's early building

The powerhouse itself is taking on its final shape as the structur begins to rise for units seven and eight. Work is progressing on the blocks for the final two units and the pump-house for units five to half complete.

The existing dock is being extended 200 feet to aid unloading in bad and to facilitate handling of larger vessels. A second conveyor belt installed to allow two coal vessels to unload simultaneously.

Lakeview is due for completion by 1968 when its eight units will p total of 2,400,000 kilowatts.

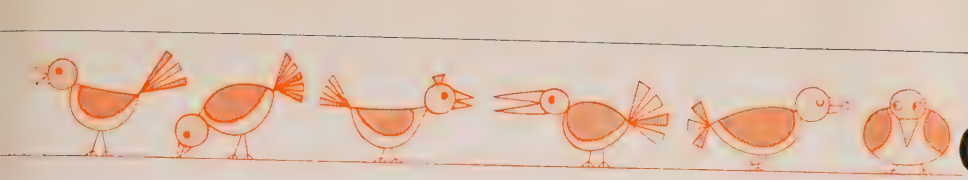
## September Energy Production

Primary energy provided by Ontario Hydro in September totalled billion kilowatt-hours, an increase of 8.3 per cent over the same m a year ago.

For the first nine months of 1965, the total is 31.75 billion kilo hours, up 6.6 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand in Sep ber was 3.71 billion kilowatt-hours, 1.9 per cent more than the pre month.

The seasonally adjusted total for September represents 44.51 b kilowatt-hours at annual rates. This is 320.0 per cent of the e demand in 1949.



# off the wires

"Where were you when the lights went out?" – was the question on everybody's lips in the ake of the biggest power breakdown in history. egular Monday morning quarterback sessions ere dwarfed by Wednesday's post mortem get-gethers and everybody had an anecdote based n his own particular whereabouts at the time e kilowatts got clobbered. So why not a word out ours?

Well sir, we had just left a Yonge Street shop th a bottle of milk and a loaf of bread and were ading towards the subway and the suburbs con-mplating the joy this meagre though nourishing re would bring to young hearts and tummies — nen the world came to an end. Stark astonish-ent could be discerned on urban faces dimly houetted against the lights of creeping vehicles. Traffic lights ceased to function, subways and reetcars were immobilized and the bright enues of light were snuffed out in an instant. certain as to the best course of action, we ntinued on past the black maw of the subway trance and set our sights on a faint glimmer light which appeared to be emanating from an familiar building halfway down the block.

We were inside and seated before the nature the establishment began to register. It was pub or a bar — or whatever they call those ces where alcoholic spirits are dispensed. ape was out of the question. Confronted by a ly gentleman in a white coat with a towel over arm and pencil poised — we blurted out an er for a double orange juice and settled back to ke the most of the situation.

nd it was a cheerful place. Cheap white dles obviously stocked for such an occasion kered and sputtered from brown bottles of ch there appeared to be an unlimited supply. ocial barriers were down in the face of com- disaster and at the next table a truck driver banker were heatedly explaining just what had pened. They were unaware, of course, that the ation was also being analyzed at that very ant by a distant Manhattan housewife, a da dentist and a Chicago cab driver.

he banker attributed the catastrophe to tight ey and fluctuations in the rate of exchange. was shouted down by a loud voice at another which we attributed to the janitor of a nearby company building. He allowed as how electric ng was at the bottom of it all. His logic 't easy to follow but it had to do with a erious draft of ice-cold air originating some-e in the Russian arctic which swept through ffected areas, triggering electric heating in-tions.

rsonally, we were inclined to favor the truck 's version. He put it down to the atomic and saw it as his duty to deplete the ishment's stock before health authorities de-it unfit for consumption due to fallout mination.

pped of any excuse for further dalliance by porary return of power, we gathered up our provender and were about to depart when ss again descended. Resigned now to a long session of suffering, we ordered more orange juice on the theory that vitamin C might help improve night vision.

With the exception of the lighting, life went on pretty well as usual amid our unfamiliar surroundings. Of course, the air conditioning was out and when cigar smoke reduced visibility to absolute zero, the doors were opened and the patrons subjected to cold, dank air only slightly less disagreeable than the suffocating fog.

Hero of the occasion, in our opinion, was the innkeeper himself. All through the ordeal he stuck by his cash register although he had to crank it by hand. When it was all over he surveyed his bleeding knuckles and still managed a grin.

Not one to be taken in when wolf is cried a second time, we greeted the next coming on of lights with aplomb and more citrus juice. Sure enough, it was a false alarm and candlelight again prevailed.

Smug now in our assurance of an unsolicited night on the town without wifely recriminations, we returned to our nutritional exercises while contemplating the diabolical cleverness of the engineering profession. Who else could have devised an electrical system so sophisticated that it could break down leaving everyone in the dark including themselves? With some bitterness we contrasted this to the publishing business where the trail from error to editor is glaringly clear.

Long after the lights had resumed their customary reliability, we lingered on in the expectation of further trouble. Interrupted at last by the classic call: "Time, gentlemen, time", we took our leave but not before accusing the friendly bartender of making off with our bottle of bread and loaf of milk.

■ Gladson Wedge has been reading Hydro meters in Burford for over 25 years and during that time he has encountered his share of unusual experiences. His latest involved a sojourn in a butcher shop basement where he was imprisoned by the owner who locked the door when he found it ajar.

Such a predicament would never occur in a bank or a liquor store, of course, but Mr. Wedge did recall an unexpectedly warm greeting he received from a winsome young housewife some time back. The lady, it seems, was expecting her husband and greeted his knock with a tender "come in dear."

Equal to the occasion, Mr. Wedge replied: "I'm sorry ma'm, but it's a new meter man this month."

■ Electronic snooping is becoming a national fad if we go along with Gwen Gibson of the Herald Tribune News Service. In an interview with an executive of a firm which specializes in top-grade spy equipment, she suggests that the cloak and dagger and round black bomb are old hat. The firm's specialties include keyhole microphones, "whisper lamps" and sub-miniature monitoring devices capable of being slipped into a dry martini or a wet bikini. The company's pride and joy is a "sugar-cube" transmitter and other sending devices designed to fit into belt buckles, broaches, earrings or under one's fingernail. The whisper lamp is virtually detection proof as it will pick up any sound in a room and transmit it to a monitor, even when partly disassembled.

As disconcerting as the devices themselves are the people who are buying them. No longer confined to full-time registered spies or licensed sabateurs, they are being snapped up by government investigators, jealous lovers and nosey neighbors. Not long ago Toronto police were alerted to some shady goings-on by a lady with a transmitter concealed in her brassiere. Seems like only yesterday when the contents of this bit of feminine apparel could be pretty well taken for granted.

Even the walls have ears is becoming quite literally true and as we strip away our lest vestiges of privacy our only security will be confined to the inner recesses of our minds. But if we take care not to transmit our emotions through the senses of sight, sound, feel or smell, we will still be able to give the boss a good mental ticking off, on occasion.

■ On the subject of snooping, there is the recent case of the professor who was granted $32,000 by the U.S. National Science Foundation to study the sexual behavior of the American cabbage. Unknown to most of us, it seems safe to presume, some cabbages have been rejecting the pollen of their own species while readily accepting other pollen.

The full significance of this conduct is not revealed but if it's worth $32,000 to investigate it must be indeed deplorable. There is an unhealthy ring to the business and we trust the science boys will put an end to any nonsense that may be sprouting among our cabbage heads.

■ Finally, there is the gas stove gem to which we are indebted to Manitoba Hydro's "Hydro Lines". via Electrical Business.

"This is the story of the pilot who hit the silk, but fast, when his engine conked out.

"Floating down through space, he came upon an old lady flying up through the same.

"Hey lady," the flier yelled, "seen anything of a CF-5 interceptor going down?"

"Just passed it," she yelled back. "Seen anything of a gas stove going up?" □

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# ontario hydro news

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**FRONT COVER**

It's a far cry from the pine and spruce forests of Ontario to the factory home of the tree featured on our cover. It suggests the kind of competition nature's product is up against in the Christmas tree field. We like the simplicity of decoration which consists chiefly of red wool tassels and bows. Plastic holly on the plastic tree complete the departure from Christmas tradition. Harry Wilson photographed the display at the Robert Simpson Company store in downtown Toronto. Further details about synthetic trees commence on the opposite page.

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## a christmas messag from the chairma

"A little child shall lead them." The Christ story is built around a very humble cra and its divine occupant. Down through centuries the wonder, magic and myster creation in this event has been a const beacon-light of hope and promise to a confu and strife-torn wo

We continue to develop a very complica world and this may be inevitable. It not be a better world if we fail to emp the simple virtues of a child: trust, fa love and loya

As we celebrate this season among families and loved ones, may we por this truth and strive to give it rea especially to those who need our com and good ch

The members of the Commission our senior staff all join me in expressing warmest Christmas Greetings to all members of our Hydro family, both provin and municipal, and to our pensior

W. Ross Stri

# THE PLASTIC FOREST

## pines and spruce with sap in their veins are facing tough competition as christmas tradition bows to convenience



by LOIS LANE

As the big day approaches, Christians across the land will be setting out in quest of the Christmas tree. A few will follow time-honored tradition and direct their search in bush lots and fir forests. Others will hie themselves to the corner lot and try to visualize flattened spruce and Scotch pine as they will unfold in the living room. But more and more will head for the attic or cellar where last year's model reposes among the tinsel and holly stashed away last January.

The Christmas tree with sap in its veins is facing its stiffest competition since the first simple fir was paid reverence in Germany's upper Rhine area during the 16th century. Decorations, of course, have grown more sophisticated from the time tiny tapers, strings of fluffy popcorn and bright red berries adorned the boughs. But the tree itself has remained constant — until recently.

Tree manufacturers such as Noma Lites Canada Ltd., and Carillon Lighting Ltd., believe their sales this year will reach between 300,000 and 350,000 trees — a 25 per cent increase over last year. This is a far cry from a decade ago when the first spindly artificial specimens were greeted with hoots of derision from astonished shoppers.

Henry Downes, senior toy and decorations buyer at Simpson-Sears, a man familiar with Christmas decor for 33 years, is also optimistic about the synthetic tree market and disinclined to take it lightly.

"Eight years ago," he explains, "When the first artificial tree made its appearance, we sold a few. But new manufacturing improvements have made the trees more life-like and our sales

Opposite: *dressed up, these tre*
*the T. Eaton Company sto*
*downtown Toronto have an auth*
*look. They come from factories in To*
*and Hong Kong.* Lower left: *produ*
*of artificial trees in high*
*at Carillon Lighting. Staff of*
*kept busy during the pre-Chris*
*season.* Lower right: *shredded me*
*vinyl makes almost-real bran*
*They are being prepared for pack*
*by Carillon empl*

are running in the thousands. In fact, business is so good that one of our stores, located in a Hamilton shopping plaza, has decided not to sell fresh cut trees this year."

Ironically enough, the whole concept of producing artificial Christmas trees began in Germany, where the tree first became part of Christmas tradition, after World War II. Even today, production equipment and vinyl is imported from that country. But manufacturing has come a long way since the time when rayon was shredded into green, limp strips affixed to limbs and passed off as a tree. Aluminum trees were the next development — attractive to a degree but a potential source of electric shock when lighted.

"The trend a few years ago was toward the highly colorful metallic reds, golds, blues and silvers of the decorator trees," says John Rice, owner of Carillon Lighting Limited, in Toronto. "But now, standard green is the big seller, thanks to new developments in the industry."

Four years ago, one Canadian home in 100 sported an artificial tree and its ornaments were the best clue to its identity. Manufacturers are so enthusiastic about their new lines this year they're predicting one out of every 10 Christmas trees bought will be artificial.

The soft, natural green color of the needles is part of the swing to reality which is behind all the optimism. Today's artificial trees, especially Scotch pines, do look a lot more like trees than their freakish predecessors. Some even come equipped with a fresh woodsy pine aroma, either sprayed on at the factory or in a capsule which is broken and hung on the tree.

To achieve authenticity, Scotch pines are made much the same way as brushes. Green plastic bristles, guaranteed not to shed, are entwined with enamel wire, which, cut at various lengths, become branches. The boughs are color-coded to dowel holes in the trunk so when the assembly job is over, the tree looks more like a Scotch pine and less like the result of a grotesque radiation mutation.

The feathery, close-clustered needle effect of spruce is achieved by feeding rolls of tempered vinyl and wire into a device which simultaneously shreds the vinyl and twists the wire around it to form branches. In the spruce-balsam line, the completed tree comes either as a one-piece unit or with detachable branches.

Who buys synthetic Christmas trees? Anybody and everybody. But some areas have been hold-outs. "Both the West Coast and the Maritimes have been slower to buy because they have an abundant tree crop at their doorsteps," said Mr. Downes. But again this trend seems to be changing with sales on the increase, especially in British Columbia, where the Scotch pine is the big seller. Ontario customers seem to prefer the spruce which is, perhaps, more traditional.

Emanuel Grossman, Noma Lites director of marketing, points out that sales increases reflect other positive properties of synthetic trees. "We feel that they are more economical because they can be folded away season after season. Even more important, artificial trees eliminate the fire hazard as they are made from a plastic material which will not burn," he says. "Sweeping up of needles around New Years' is a thing of the past."

Cost of Canadian-made trees run anywhere from $6.95 for a four-and-a-half foot tree to around the $25-$30 mark for the deluxe foot variety. Very authentic looking s cedar and hemlock trees made in Hong are more expensive. One 10-foot Can produced tree, for hotel lobbies and places with high ceilings, sells for $125.

For traditionalists who prefer a natur this year, the tree growers expect pric range from $3.50 to $5.50 for good trees. Last year, Canadians bought 4,000,000 native-grown Christmas trees approximately 8,000,000 were exported United States.

The Canadian Standards Association about the safety factor with both real a thetic trees, stressed the need to check equipment. They advise everyone to insp frayed wires, cracked or brittle ins broken lamp sockets or damaged plu sure to replace worn lighting sets, i advice.

In the case of natural Christmas tre carried out by the federal forestry dep indicate that the danger of fire can b tically eliminated if the tree butt is water for the entire period the tree i house. Metal trees may be used with no fire hazard, but to prevent the possi shock CSA recommends that lights not directly on the tree.

Who knows what Christmas 1984 wi Over the years, metal and glass or have replaced popcorn and ripe berries; lights out-moded the candle; and now trees are giving nature's product stro petition. Maybe we'll all sit around a s branch, gilded of course, and sing "D Halls with Plastic Holly" — to a go-go







# GOOSE FOR CHRISTMAS

**king of the festive board for centuries, the goose may be making a comeback in ontario**

by PAUL CHISHOLM

So delighted at the sight of the bird was Tiny Tim, in Dickens' "A Christmas Carol", that he enthusiastically beat the table with the handle of his knife.

Nineteenth century French novelist Emile Zola captured the same ecstatic moment in his writings: "When the goose was on the table, huge golden and running with gravy, it was not begun all at once. A sort of wonderment had silenced every tongue. What a devilish fine beast it was! What legs! What a breast!"

Traditional banquet fowl for king's royal feast and peasant's holiday dinner, goose has for centuries been the choice of good food connoisseurs. A valuable source of proteins, vitamins and minerals, it is claimed by some to be the best value in poultry.

But for every goose gracing a Christmas table in Canada this year, at least 10 turkeys will be served. Retailing at approximately 25 cents a pound more than the familiar gobbler, a goose nonetheless serves more hungry people than an equal quantity of either turkey or chicken when correctly carved, according to producers.

While goose production in Canada has been declining in recent years there is evidence it is making a comeback. The reasons include growing numbers of European immigrants who favor goose as holiday fowl and the increasing use of young geese on fruit farms as "weeders". In Ontario last year, goose production was up by 21.4 per cent.

As well as being an easy-to-feed pasture bird, geese are long-lived, fast-growing and hardy. Weighing nine to 10 pounds at the age weeks they are considered among the efficient producers of human food.

Modern, economical production m which pushed turkey and chicken prod ahead in Canada have yet to be app geese on any large scale. Attractive ma practices have also been limited.

More than half the geese raised in C are produced at the Community Farm Brethren, east of Galt, where old worl combine with modern agricultural prac

Spiritually devout and of simple tas 100 members of the Brethren, includ families, follow the Christian teachi Julias Kubassek who from humble beg founded the communal movement in The largest pedigree goose farm in America, the 1,200-acre property al ports dairy and beef cattle and a smal producing operation. Crops include apples, pears, peaches and cherries.

The Brethren have been raising gees years. Their carefully-bred Embde Chinese variety, renowned for its lon and meaty breast and low fat conte sistently wins top prizes at the Royal tural Winter Fair in Toronto. Under tural regulations the farm recently bec first goose hatchery in Canada to operation and product approved by and provincial authorities.

From the incubation of the egg packaging and fast-freezing of the b Brethren operation is strictly electric

*Christmas table-bound geese on the Community Farm of the Brethren, east of Galt, which raises more than half of Ontario's total production. While geese are outsold by turkeys ten-to-one, their popularity is increasing.*



*Old world ways are combined*
*modern agricultural and proce*
*practices at the Bre*
*community. While manual*
*still has a large place in*
*production, electri*
*used from incubation of e*
*fast-freezing of the fi*
*product. Brethren geese are k*
*for long, deep and meaty br*

thousand breeder geese supply the farm's hatching eggs.

Unlike turkeys, geese can remain outside through all seasons, and controlled environment is unnecessary in the breeder house. Uniform temperature is maintained by a system of fans. An overhead 12-ton bulk feeder bin delivers by means of tubes to turkey-type feeders.

Goose eggs are approximately three times the size of turkey eggs. Initially cleaned in an adapted washing machine, the eggs are kept in incubators for 25 days.

Goslings are hatched between March and July and are fattened in the field. Of 37,000 goslings produced on the farm last year, all but 5,000 were sold to producers and farmers across the country. The sale of day-old goslings is the most profitable part of the business.

Apart from their table value, the light-footed birds excel at ferreting out weeds on vegetable farms and in strawberry and asparagus patches. The Brethren have also exported goslings to Britain, the West Indies and the U.S.

Killing and processing geese is largely a manual operation on an assembly line basis. After plucking, birds are dipped in a wax solution to remove remaining down and feathers. Womenfolk at tables remove the last traces with tweezers.

Comforters and pillows made from the down and feathers, which are washed in commercial laundry equipment, are an important sideline to the overall operation. Made by the "sisters" of the colony, these products are in wide demand. A double bed comforter sells for as much as $75. It takes three geese to provide one pound of feathers.

Another valuable by-product from the Brethren farm is a paste made from goose liver. Served on pastry or crackers and familiar to members of the cocktail set as "pate de foie gras," it is comparable as a gastronomic delicacy to caviar.

"Were it not for these by-products, goose production for the table would hardly be worthwhile", according to Brother Julias II, nominal leader of the community and son of the founder. "Goose processing requires a maximum of labor, although I am sure the procedure can be further refined as has been done in the turkey industry. Meanwhile, we are hampered by shortage of help and can produce nothing like the demand that exists for good geese."

The Brethren community, complete with its own religious services, school, and fire department, is administered by a "council" of adult members. Electricity plays a prominent role in both agricultural and social activities. No fewer than 40 electric motors carry out a variety of functions on the farm, including a unique grain drying operation.

Well-lit farm buildings have meant an end to night-time egg thefts and done away with the need for watchdogs, states Brother Gabor. Theft of goose eggs, valued at approximately a dollar each, was for some time a major problem to the community.

Electricity, it seems, serves not onl
goose, but also saves the golden egg.

## cooking your own go

Cooking your own goose is as simple ph
ly, as it is figuratively. Here is the proc
suggested by the Poultry Products Instit
Canada:

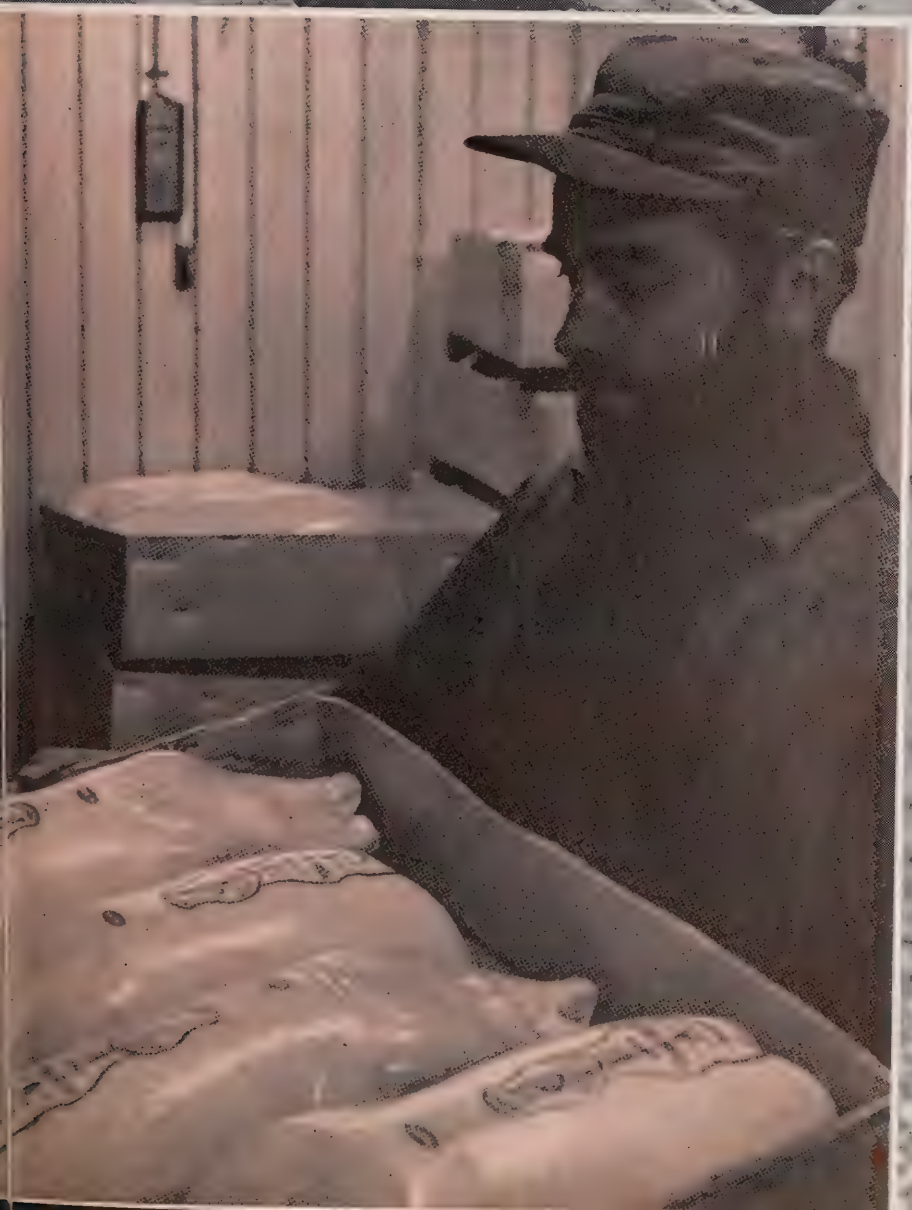
Prepare goose for cooking. If bird i
fat wash with baking soda and water, ri
clear water. Dry thoroughly.

Rub body cavity with salt and peppe
stuff with highly seasoned bread dress
quartered apples and/or peeled onions. S
or sew up openings, and truss. If very fat
through skin into layer around legs and

Place breast-up on rack in roaster, a
cup of boiling water and cover tightly.
in moderately slow oven, 325 degrees
heit, for one hour. Pour water and fa
pan and continue roasting goose unc
until tender. A six to nine pound
(cleaned) will take approximately th
four hours.

If bread dressing is used, serve goos
baked apples stuffed with sweet potatoes
six to eight apples, hollow out shells, s
sprinkle with brown sugar and fill with a
mately three cups of seasoned, mashe
cooked sweet potatoes. Bake around the
the last hour.







# BLACKOUT REPORT

**"studies to date suggest that the protective systems of the interconnected utilities require a greater degree of sophistication"**

Stronger electrical system interconnections between the United States and Canada have been suggested by one key U.S. official as the result of last month's major power blackout which affected major Ontario centres, New York State and New England.

Steward Udall, U.S. Secretary of the Interior, said: "Both nations must have the cheapest possible energy to stay competitive and we must constantly reduce the cost of energy if we are to achieve this goal."

In Mr. Udall's opinion, the disturbance on Hydro's East System "only triggered the situation" and "a coincidence of things" caused the blackout to spread.

Intensive investigation is continuing into the causes and full implications of the power interruptions and much remains to be learned.

Latest reports confirm that the operation of automatic protective equipment on Hydro's East System in a manner which was not anticipated set off the series of power failures on the interconnected systems. But while the relay systems failed to cope with conditions as expected, no inherent fault in the equipment itself has been detected.

"Studies to date suggest that the protective systems of the interconnected utilities require a greater degree of sophistication," Ontario Hydro Chairman W. Ross Strike has announced, "and we are reviewing the design of all these systems used on the Ontario power grid."

Mr. Strike emphasized that until the U.S. Federal Power Commission study team of utility experts, of which Hydro is a member, completes its survey of the entire interconnected network, "no one will be in a position to state exactly what happened, why, and what has to be done to correct the problem.

"Such interconnections have provided tremendous mutual benefits to the interconn systems from the standpoint of securit power service and economy of operation stressed.

Meanwhile, Hydro is continuing wit own investigation into the split-second e which occurred in many areas of the sy at the time of the initial power interru November 9.

Red zig-zags made by mechanical pe scores of graphs provide some of the dence. Like an electrocardiogram reco heart beats, Hydro's graphs depict the sustained by its system. As one enginee plained, "The system is not static. It is living, breathing organism."

A few minutes before the first distur at 5:16 p.m. Hydro was importing 500,000 kilowatts from the U.S. at Ni and exporting 200,000 kilowatts at Cor Power was flowing normally in a cloc direction around Lake Ontario.

Suddenly the power flow reversed at Ni and Hydro became an exporter instead importer. The sudden change of frequenc power flow pattern caused the collapse o tension systems in most of Southern O and throughout New York State and England. The disturbance also reverb through the Interconnected Systems which extends south to the Gulf of Mexic west to Montana, but only caused light in this area.

Protective equipment tripped out ur Robert H. Saunders, R. L. Hearn, Lak and Niagara stations and output was matically reduced at Ottawa River and eastern Ontario plants. Interconnectio tween Ontario, New York State and Mi were interrupted. Hydro lost approxi

*Before and after the lights went out in a section of mid Toronto. Bright moonlight helped but the big town almost ground to a halt as its electrical lifeblood faltered.*





*Every co-operation was extended*
*media during and afte*
*blackout. Chairman W. Ross S*
*is shown being interviewe*
*Walter Lister of the Columbia B*
*casting System. Group, c*
*photo, at Richview control ce*
*was instrumental in rest*
*power. Jim Harris, system superv*
*engineer, grabs a quic*
*during interview with a repo*
*Chart represents dema*
*Hydro's East System*
*normal Tuesday (Nov. 2) and o*
*of blackout (No*

3,800,000 kilowatts of generation in a few minutes.

The process of restoring power, section by section, is an exacting task. When demand exceeds the capacity of generators, the units automatically trip out to protect them from overloading.

System supervisors had restored power in most areas and re-established ties with the U.S. when a second disturbance occurred at 6:54, causing another collapse. At this point Hydro isolated its system from New York State in an effort to restore power from its own resources.

At 7:24 Richview was rebuilding the system with hydro-electric generation from Ottawa River and Northeastern Ontario plants and assistance from Detroit Edison when instability, arising from widely-separated generating stations and power demands, caused a third collapse.

Then, gingerly, Richview control centre ordered a gradual buildup in generation, matched it with demands, and by 8:30 p.m. had restored power to most areas. Toronto coal-fired units, slow to start up because they had cooled off, came on and further stabilized the system.

The interconnections with New York State were restored at 12:57 a.m., November 10.

Power interruptions, ranging from a few minutes to three hours, occurred across Southern Ontario in a patchwork pattern between Smith Falls and Sarnia. Power was off in Northeastern Ontario for up to 10 minutes. Ironically, the lights stayed on at power-rich Niagara Falls.

Hydro officials praised the assistance received from Quebec and Michigan which minimized the extent of the interruptions and kept power flowing in the western and eastern ends of the province.

In the east, Hydro-Quebec stepped up aid to 400,000 kilowatts as its peak demands declined. Detroit Edison fed varying amounts of power into Western Ontario during the emergency.

Hydro has been connected to Detroit Edison since 1953 and to the CANUSE system since 1955, and this is the first time a major collapse has occurred.

Over the years Hydro has steadily reduced power interruptions, with important aid from interconnected systems. These have strengthened its ability to cope with contingencies, such as Niagara ice jams and breakdown of generating units. On many occasions neighboring utilities have assisted Hydro in meeting demands during emergencies — and Hydro has given similar aid in return. Because the lights stay on, most people are unaware when a power interruption has been averted.

Operating records for 1964, for example, show that the reliability of supply from Hydro's bulk transmission system to more than 100 primary distribution stations in Southern Ontario was within a minute fraction of 100 per cent — actually within one ten-thousandth of one per cent.

Proud of its past record of service, Hydro is leaving no stone unturned to prevent a recurrence of the November 9 blackouts. □

## interconnections

Ontario Hydro is a member of the CANUSE (Canada — United States — Eastern) power network which in 1962 was tied in through the Pennsylvania-New Jersey-Maryland interconnection with the gigantic Interconnected
tems Group.

This vast single power network now stre
from Northern Ontario to the Gulf of M
and from the eastern seaboard as far w
Montana. The generating capability o
area is about 20 times that of Ontario H

Interconnections are made primarily to
mutual assistance in times of emergency.
also help to reduce normal operating cos

About 30 years ago most power sy
operated independently and provided
tricity only for the immediate region a
the generator. But power requirement
doubling every decade and individual sy
have been hooked together to provide
mum safety and efficiency.

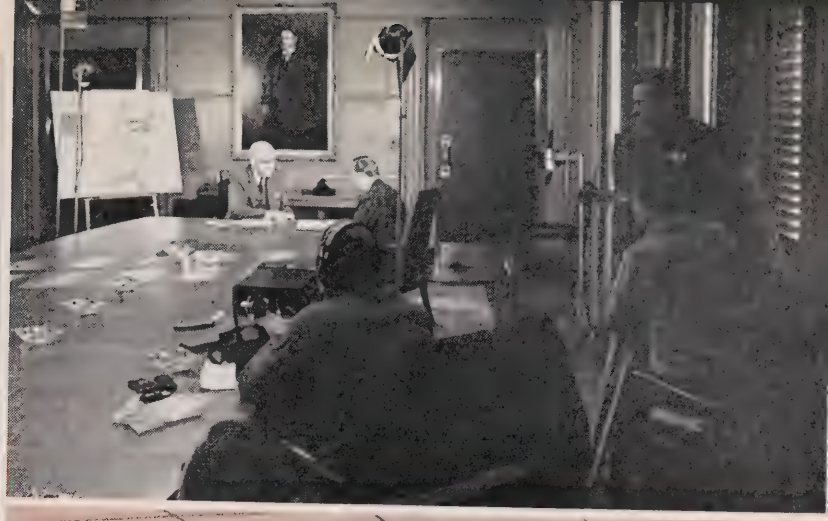
One system helps out another when t
trouble and systems buy electricity from
other when surplus energy is going
economical price.

During the major interruptions, Nov
9, assistance from Detroit Edison and H
Quebec helped Hydro to keep power f
to Western and Eastern areas of the pro
Operations officials say this emergency a
helped Hydro to restore service more q

Hydro has received help on several
sions in the past few years, notably wh
jams have restricted output of power s
in the Niagara gorge.

Similarly, one night a few winters a
Power Authority of the State of New
called for assistance. They'd lost 1,0
kilowatts of generating capacity and
additional power in a hurry. Hydro was
help them out.

Hydro has been linked with other s
since 1953 and the November 9 blacko
the first major mishap.







# OINK-OINK AND QUACK-QUACK

**not all of the toys santa will leave have to do with war and destruction**

Child's play, as Santa's traditional helpers attest, is a serious business. The real elves, of course, are the production staffs who turn out more than $120,000,000 worth of toys in Canadian workshops annually. And they are prompt to take advantage of the newest manufacturing techniques.

The assembly line approach has long since replaced the customary workbench. Annual "tooling-up" to introduce new lines is a more recent innovation. Even the science of psychology is aiding designers to arrive at what one newly-opened workshop in Ontario claims is the ultimate in toys for pre-schoolers.

Fisher-Price Toys Canada Ltd. began production in its 30,000-square-foot Orangeville plant last May. It is the first manufacturing venture outside the U.S. for the East Aurora, N.Y., company, one of the largest makers of tot's toys in the world.

The colorful sights and unique sounds of these previously-imported toys are familiar to three decades of Canadian small fry. Most toys are of the push-along or pull-behind type — to the accompaniment of a variety of animal and mechanical noises ranging from "beep-beep" and "oink-oink," to "quack-quack" and "brumm-brumm." Made of splinter-resistant Ponderosa pine and plastics, the lines include wind-up toys and building sets.

Some of the toys — sad-eyed hound Sn Sniffer, for instance — have been in pr tion since shortly after the inception o company 34 years ago. New toy lines a from year to year are the outcome of exte research and development programs at Aurora in which local kids themselves the ultimate say.

As well as coming up with new toy company's staff of 15 designers, all eng with extra training in child psychology, prototype models through a series of safety and durability tests, and dete practicability for mass production.

The new toy is then introduced to a ch group of children in a special room furn in a comfortable, home-like manner. T action of the youngsters, which largely mines whether new toys in development s be marketed, re-designed or scrapped, is in detail by the anxious designers wa through a one-way window.

A new toy is considered to have poten it holds a child's interest for 10 to 15 m One new product, with a record 45-r achievement, turned out to be a best sel

The new Orangeville plant, with a averaging 50 persons, is already turnin

*Toy production in Canada is valued at more than $120,000,000 annually. New lines which will help fill Santa's sack this year include tot's specialties manufactured at Orangeville. An Ottawa mother — member of the Canadian Toy Testing Council — watches as her children put playthings through the ultimate test. Such studies are important in maintaining the standard of Canadian toys.*





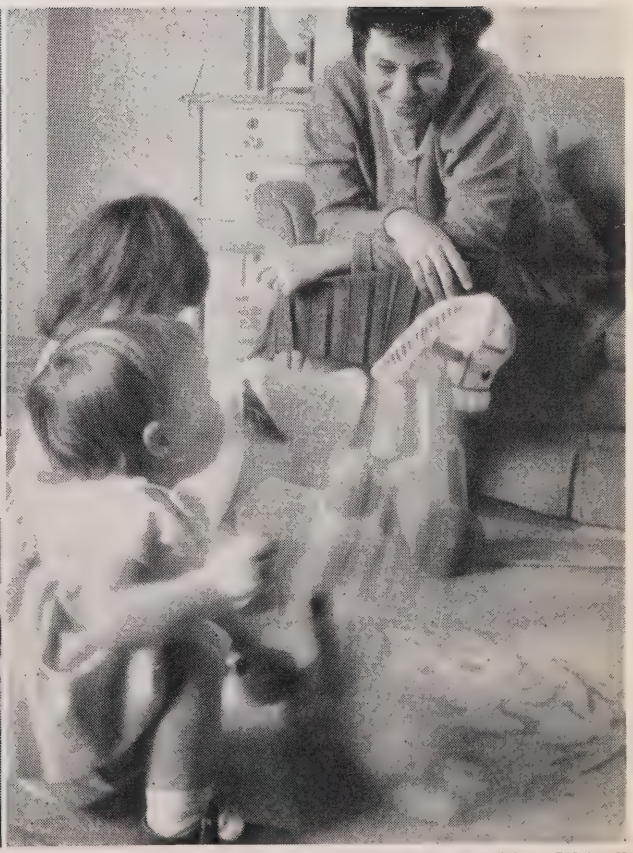


PHOTO COURTESY IMPERIAL OIL



half the company's range of 60 models and more will be added next year as additional production lines begin to roll.

"Our object is to make the Canadian company a complete, self-contained entity using local products entirely," states Robert Roberson, general manager. "As well as supplying the domestic market, our Orangeville operation will produce all exports to Britain and other parts of the Commonwealth."

At a time when most toy manufacturers are complaining about cheap imports from Asia and elsewhere, Fisher-Price products are being sold in more than 50 countries.

The company takes some pride in the fact that it has kept to the international forefront in sales without entering either the arms race or catering to the current monster craze.

"From the start we have concentrated on toys that played along with children," said Mr. Roberson. "There is an educational element in our toys, such as clocks that teach the time and blocks that teach colors, but essentially our toys are to amuse rather than instruct. We feel there is also learning in training the eye to follow objects and identify colors, shapes and motions."

Larger scale observations and testing of children's playthings are conducted in Ottawa by the Canadian Toy Testing Council. Approximately 100 toys are placed in the homes of 12 volunteer, unpaid mothers who comprise the council, and in such institutions as kindergartens and hospitals where teachers and therapists co-operate. Each woman is responsible for a certain type of toy.

During a four to six weeks period of rugged use, the toys are "consumer evaluated" to a set of standards which incorporate form, color, finish, size, weight, safety, function, durability and price. Mechanical and chemical tests are also conducted by the council and reports are made from observations as to whether the toys stimulated constructive, creative, physical activity and whether they were used in a manner other than intended.

All these factors are taken into account when the toys are rated by the council (Good Buy, Recommended, Acceptable and Unacceptable). Along with the ratings go any recommendations to the manufacturer for improvements.

The toy testers publicize their findings through exhibitions, radio and TV talks, meetings sponsored by Home and School associations, women's groups and in the November bulletin of the Consumers Association of Canada, to which the council is informally affiliated. The council also periodically publishes a Toy Buyer's Guide. Rejected toys are not mentioned in these publications although confidential reports are made to the manufacturers.

While toy manufacturers are under no obligation to submit toys for testing or a suggested improvements, the majority, in ing all the larger Canadian-owned compa co-operate with the council.

## industry for orange

Orangeville's new toy factory is one of major manufacturing plants to locate in town since 1963. The town's industrial p consumption increased last year by a spec lar 32.5 per cent — three-and-a-half time provincial average.

New industries include the manufactu electrical appliances, industrial exhaust sy and specialized equipment, automobile ators and heaters, and a plastics plant.

"Industry is no longer centralizing i Golden Horseshoe," believes Bill Ha past-president of the Orangeville Chamb Commerce and president-manager of Electric Ltd., the first of the industrial comers. "The five new industries represe proximately $4,000,000 in buildings equipment, and between 450 and 500 jobs."

Orangeville's 5,500 population has a doubled since the end of World War I extensive new housing developments are t way. In three years, residential and apar sales of electrical heating have increased 10 to 60 units, states Carl Johnson, ma of Orangeville Hydro.

# saint john's of cayuga




**oil lamps provide the only light but the heating system is as modern as tomorrow**

Tempers were still cooling off after the War of 1812 when the tiny Anglican Church of St. John the Evangelist was built in South Cayuga, near Dunnville, but worshippers now enjoy its services in the total comfort of ultra-modern electric heating.

Heating this 60 foot by 25 foot frame structure had been a problem down through the years and such fuels as wood, gas and oil proved unsatisfactory since the church was seldom used during the week.

Fortunately, a man named John Dawson, who is manager of Dunnville PUC and has a reputation for resourcefulness, has a summer home in the area. John takes an interest in things historic and he was able to solve the parishioners' problem with the use of modern electric baseboard heating units.

He had plenty of precedent, of course, since churches old and new, from one end of the province to the other, are turning to electricity for heat. Like other buildings with short occupancy periods, high ceilings and large windows, they can be comfortably heated by one or another of the many electric heating systems available.

But electric heating is about the only contemporary convenience which has been allowed to intrude on this authentic example of Canadiana. Light is provided by the original multiple oil lamp chandeliers and side oil lamp brackets — sufficient since services at St. John's are held largely in the morning and afternoon by available light. Thanksgiving evensong service by oil lamp is a nostalgic exception.

The church traces its inception back to the turn of the 19th century when a circuit-riding Anglican missionary from the Diocese of Quebec administered to the spiritual needs of a few families living along the Grand River in an area bounded by present-day Caledonia and Port Maitland. After the War of 1812, immigration increased and as the population expanded, a permanent place of worship became a necessity.

Construction of St. John's commenced in 1843 and it was completed the following year. The church was consecrated in 1846 by the Right Reverend John Strachan, Lord Bishop of the Diocese of Toronto and the service was attended by many of the Port Maitland army and navy personnel. One of the original church wardens, Lt. Col. John Johnson, later ordained and transferred to Weston, became the founder of Trinity College School, now located in Port Hope.

The building itself is of frame construction with hand-hewn oak joists and it contains the original hand-made pews. The handsome rood screen, lectern, bishop's chair and vestibule bench have all been hand-carved and donated over the years by the parishioners. Even the nails which hold the clapboard to the frame have been wrought by hand. □

# A TOWER OF STRENGTH

**yesteryear's urgings and representations are today's hydro policies in ontario ...regionalism has been cast aside in the cause of the common good ...electrical utility membership has increased steadily from the beginning**

Such are among the thoughts that stand out in the mind of D. P. (Bud) Cliff, 63, of Dundas, as he steps down this month after 13 years as secretary-treasurer of the Ontario Municipal Electric Association. A veteran of almost three decades service in local government and public life, Mr. Cliff will continue on as an Ontario Hydro Commissioner.

Traversing the length and breadth of the province on behalf of OMEA at least once a year, Mr. Cliff has missed but three district meetings during his term as chief administrative officer. His duties as Hydro commissioner also involve travel and he is on the road coast-to-coast as vice-president and sales manager of Dominion Lightning Rod Company, a business which has been in the family for three generations.

"It's a case of OMEA work outgrowing me rather than the other way round," Mr. Cliff explains. "The association's role has grown to such an extent that it demands the full-time services of a secretary. I must devote myself to my business, but apart from that I feel there is need for new blood."

Educated at public and high schools in Dundas, Mr. Cliff first entered public life in 1937 as a member of the town council. Wentworth County councillor and warden in subsequent years, he became a member of Dundas Public Utilities Commission in 1945, after his election as mayor.

Mr. Cliff was chairman of Dundas PUC for four years and was elected president of District 5, OMEA in 1949. Following his 1950-51 term as president of the parent body he was appointed OMEA secretary-treasurer in 1952.

Significantly, some of Mr. Cliff's earliest speeches as an OMEA official called for a more uniform power costing system for the utilities, and the need for amalgamation of Hydro regions. "It is no small satisfaction that these goals have largely been achieved," he says. "In fact, as I look back over the records, I find that there are few petitions presented by the OMEA which have not been granted by Ontario Hydro."

Mr. Cliff finds that during his tenure, the Hydro family of municipalities has adopted "a more positive approach" to both its own functions and to the threat of competition. Reflecting the increased tempo of its activities, the association's budget trebled during that time.

"From the beginning, geography and distances naturally made us a somewhat organization," he said. "Today we a province-wide association in every s Sectionalism has been set aside in favo what is good for all of Ontario. This re the fact that Hydro commissioners are b informed than ever before, and that impr communications have reduced the 'size' o province.

"A sense of pulling together to meet petition has most certainly evolved. W longer have room for minor differences tween ourselves, and even less room for a these differences publicly."

What are his outstanding recollections ing those years? "Every annual conventi worthy of recalling as each one in some represented another milestone in electrical gress", he says.

Mr. Cliff was instrumental in dev ing the annual presentation of certificat Hydro commissioners who complete 15 service. He fondly recalls the special ban at the 1960 convention to honor Ross S for 15 years as a member of the Ontario H Commission. "The year 1956, too, is a m rable one to me as it was the year I wa pointed to the Ontario Hydro Commissi

"And everyone who uses an electric r sunlamp or toothbrush will be grateful fo OMEA's years of representation to p grounded plug outlets in bathrooms. I thing pretty much taken for granted toda at the time we had to do a lot of convi that it was safe. To me it typifies some o long-haul projects the OMEA has undertake

Memories, pleasant and otherwise?

"I'll always recall the tremendous tu

## full-time secretary



The sixth secretary in the 53-year history of the Ontario Municipal Electric Association and the first in a full-time capacity, Edwin C. Nokes, 45, of Richmond Hill, assumed office on December 15.

Bringing a vast store of administrative and public service experience to the association, Mr. Nokes is already familiar to many utility commissioners and management personnel throughout the province through his extensive travels on behalf of the Canadian Chamber of Commerce.

"Admittedly my Hydro experience up to now has been limited to regularly paying my bills and keeping an eye on rates, but in recent weeks I have been studying all I can," he says. "For the record, I have visited power plants as far north as Little Long out of my own interest."

The father of two teenage boys and a daughter aged 21, Mr. Nokes was born in Toronto and received his higher education at the Royal Military Academy, Sandhurst, England. He served for five-and-a-half years in the Canadian Armed Forces.

Joining Dun and Bradstreet of Canada Ltd. as a financial reporter he was appointed manager of the company's Hamilton office in 1955 after a number of other supervisory posi

Mr. Nokes was a member of the Han Chamber of Commerce and Rotary Clul a director of the Rotary Club of Rich Hill. He was active in the Boy Scout A ation for several years and was a direct Mount Hamilton YM-YWCA.

Joining the staff of the Canadian Cha of Commerce in August 1960, Mr. Noke appointed assistant Ontario manager (o zation services) early in 1962. In January he was made responsible for the corp membership department.

Mr. Nokes will be guided in his OMEA during the next few months by outgoing tary D. P. Cliff, who will remain in an ad capacity until after the next annual co tion.

MEA's testimonial dinner for Hydro's form-hairman Robert Saunders. It wasn't many ths later that Bob was killed. At least we had the opportunity to manifest some of esteem for him. . . .

Then there were the celebrations at Kit-er in 1956 marking Hydro's 50th anni-ary. I worked hard for many months on one — and you can imagine my disap-ment when, a short time before the gala , I suffered an illness and couldn't attend."

ard work has long been a trademark of Cliff. The Dundas Chamber of Commerce red him for his outstanding public service d in 1960 by naming him Citizen of the . Particular mention was made at that of his work in organizing the Dundas rical Society and the Dundas Recreation mission.

he close association between OMEA and ssociation of Municipal Electrical Utili-something else I will forever remember. and beyond the excellent working rela-ip between the two associations is my l personal relationship with Ron Mathie-AMEU manager). I have a tremendous ciation of Ron's value to both associa-'

ong many tributes to Mr. Cliff he has rmed "a maker of OMEA presidents."

d has been a tower of strength to me at meetings and I am sure to every presi-who has preceded me," declares OMEA nt Dr. R. H. Hay, of Kingston. "His and knowledge of OMEA affairs and their nship to the Hydro Commission, plus dom in dealing with all matters, will be issed.

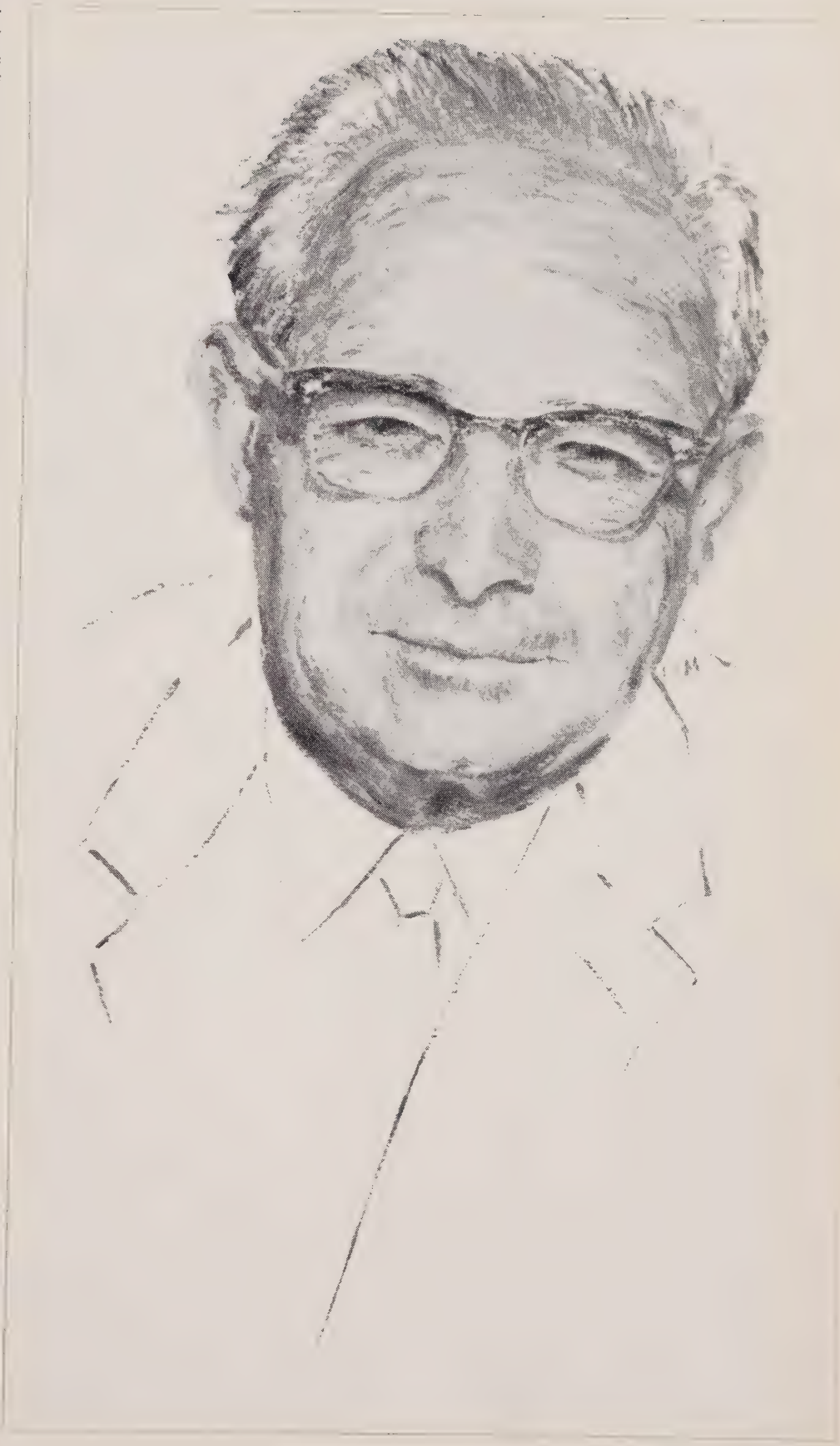
m indeed sorry to see him retire, but he circumstance he has no alternative g up this work which he has carried out fully. OMEA has not only been some-f a hobby with him, but a very real on."

what of the future?

o time in its history has the Ontario al Electric Association been faced with challenges," Mr. Cliff believes. "In the changing living patterns and urban every effort is being made to improve we govern ourselves at the municipal is up to us to show that the present al Hydro organization can best handle ffairs under whatever form of govern-y evolve.

OMEA enables us to speak with one matters of this sort and I am confident ontinue to be a strong voice and a "

□



# WHY CHANGE HYDRO?

## a strong stand against recent proposals to place hydro affairs in the hands of municipal councils featured the annual meetings of districts 7 and 8 of the ontario municipal electric association

A constructive and helpful approach toward any necessary re-organization of municipal government in the province while maintaining the status quo in local Hydro administration was the gist of the policy endorsed by Districts 7 and 8 of the OMEA at their annual meetings in Strathroy and Tilbury.

Speaking at both gatherings, Dr. R. H. Hay, Kingston, OMEA president, acknowledged that changing social habits and living patterns called for a fresh look at the way we govern ourselves at the municipal level. "At the same time," he said, "there is no reason why the proven and fundamental principles which have guided Hydro so successfully in the past cannot be continued under a regional form of government."

Dr. Hay's remarks were in reference to a report by Murray V. Jones in a study of municipal government in the Ottawa area. He had recommended that the Hydro commissions in the area of the study be abolished and their affairs placed in the hands of a committee of council under a regional government. Delegates were reminded that a similar recommendation to abolish Hydro commissions, across the province in this instance, had been made earlier by the Select Committee on the Municipal Act.

The OMEA president said it was essential that revenue supported services should remain completely divorced from tax supported functions. He said that tax committees were exploring possible means of raising funds from sources other than real estate and that they were eyeing Hydro revenue.

Both meetings endorsed a protest resolution, passed earlier by the other OMEA districts, calling the Jones' proposal " a retrograde step". District 8 added its own salvo in the form of an appendix to the resolution. Submitted by Sarnia Hydro, the addition noted that the business of Hydro was "unique in Ontario in that it places its services beyond the controls of taxation, thereby giving the citizens an asset that is both tangible and self-supporting."

A letter from the Grand Valley Municipal Electric Association was read outlining that District's decision to form a special public relations committee to deal with the problem. "The committee", the letter read, "is of the opinion that the Ottawa proposal, if instituted, would eventually apply to the province as a whole and Hydro, as we know it, would be destroyed." It believed the proposal could only be the result of "a complete misunderstanding of the history, function and responsibility of a local public utility commission."

The committee is preparing a brief and intends to meet in person with each member of the provincial parliament representing a riding in District 6. It also intends to urge each local commission to inform its municipal council of the dangers inherent in any change in the Hydro organization. District 6 hoped that all districts of the OMEA might adopt this procedure in order to present a united front to protect Hydro in Ontario.

This course of action has since been endorsed by the parent OMEA executive.

A plea for a united approach to Hydro problems arising from new concepts of municipal administration was voiced by Stanley Webster, president of the AMEU. "We appear to be on the brink of a complete re-organization of our municipal systems", he said, "and from the standpoint of electrical distribution and management, we should be prepared to administer larger areas." Only through the co-operation of the OMEA, the AMEU and Ontario Hydro could this be handled efficiently.

Other resolutions passed at the District 8 meeting included a proposal to make not more than $300 available to the district presi to encourage them to visit the various mu palities in the interest of public relations; the formation of a past president's coun operate in conjunction with the board directors. Another resolution adopted, thi originating with District 9, called for creation of a standard sign which woul mediately identify an electrically heated or hotel.

In reporting on progress of the H collection of electrical antiques, Lt. Col. Kennedy told delegates that no decision yet been made on a site for a perm museum. He said the extent of Hydro pa pation in Expo '67 and the Ontario Mu of Science and Technology were compli factors but that plans were well advance the Hall of Memory to be located in the of Beck No. 1 plant in Niagara Falls.

Among the requirements of the H Memory project were accurate histories development of the electrical industry individual municipalities. He said these have to be undertaken by the utilities selves because of the size of the projec that guide lines in compiling histories be forwarded to the municipalities.

Safety was not forgotten and delegate brought up to date in this vital area by Flack, manager of the Electrical U Safety Association. He called the 196 most action-packed decade in the hist the safety movement and said there ha a steady and promising decline in ac frequency and costs.

Control of safety should remain with agement, he contended, with labor s that responsibility to the extent of ca out the recommendations of manageme management won't accept this responsi he said, "other groups are ready to step i means one more management prerogat on the bargaining table." He said safet not be negotiated.

Delegates to the District 7 meetin able to share in the pride of the host ut participating in the official opening of roy PUC's new $65,000 headquarters b Following the ceremonies guests tou premises and then visited the Str Middlesex General Hospital — first in to go all-electric.

A highlight of the District 8 meeti election of officers, saw M. J. Brian, W elected president. Roy Warwick, Bl

Top photo: *district 8 delegates discuss the new Hydro symbol. Group includes, from left: Thomas McCord, Point Edward; C. J. Spicer, Sarnia; F. G. Tigwell, past president, Point Edward; Jack Church and John Barnes, 2nd vice-president, both of Sarnia.*

Centre photo: *it was a proud moment for Strathroy as Ontario Hydro Chairman W. Ross Strike snipped ribbon opening new PUC headquarters. From left: W. C. Pearson, chairman; Ralph Westgate, former mayor; Mr. Strike; A. C. Anderson, commissioner and Mayor Gordon MacDonald.*

Lower photo: *new District 7 OMEA executive, seated, left to right: L. W. Smith, Tillsonburg, 1st vice-president; W. C. Pearson, Strathroy, president and R. G. Campbell, Embro, 2nd vice-president. Standing: Ross Fewster, Ingersoll, director; W. Ross Strike, honorary president; H. R. Henderson, Woodstock, director; R. S. Sheppard, Aylmer, past president; P. R. Locke, St. Thomas, honorary vice-president; and Elmo Curtis, London, director.*

named 1st vice-president and J. T. Barnes, nia, 2nd vice-president. Directors elected e E. D. Cecile, Riverside; Guy Morrison, tham; and Mayor Joseph Young, Tilbury. . Cook, Windsor, is secretary-treasurer. □

## sir adam came to watch

tricity is as much a part of the modern as the livestock and implements — but asn't always so. Speaking at the annual ing of District 7, OMEA, in Strathroy, P.R. e spiced his account of the growth of ro with anecdotes of his own early riences with electricity down on the farm. the outset of Hydro service in the prov- the St. Thomas PUC chairman recounted, father recognized its potential on the and established "a Gold Medallion ation in miniature" in the house and barn. pplied by a line financed by himself and neighbors were a 100 gallon hot water r and a 2 h.p. grain grinder converted steam operation. "Taking grain to the mill was a full day proposition", Mr. recalled, "so we ground it right in front cattle."

kindred spirit where electricity was con- l, Sir Adam Beck, first chairman of On- Hydro and the father of public power in ovince, used to drop in at the Locke at milking time. "As a young gaffer", ocke told his audience, "I used to take e milking chore to show Sir Adam how child could operate our electric milker. am used to drive up in a doorless tour- achine and I once earned a dollar for ng his tire."

ong the electrical aids Mr. Locke re- in the home were a giant range and a ven washing machine.

speaker contrasted the hesitant start of lectrification with the present situation. d there are 138,000 farms with elec- rvice in the province and enough rural girdle the globe twice. Electricity is sed in some 400 farm applications.

product ever developed by man", he as done as much to promote a healthy life, ease the burden at home and assist and education. No one in Ontario re- buy an industrial machine or a do- appliance because of the cost of energy." □







# THEY'RE LOOKING FOR CONVERTS

**with 20 per cent of the new housing market under its belt, the electric heating association of ontario is celebrating its sixth birthday with plans for full-scale development of the conversion market**

Close to 1,000 electrical contractors, equipment manufacturers, distributors and utility representatives attended EHA's sixth annual meeting and industry conference held this fall in North York. In his welcoming speech, Ray Pfaff, retiring president, reviewed the association's progress to date and drew attention to the accelerated growth of electrically heated homes beyond forecasts since 1963. He credited this to builders of large subdivisions and to the spontaneous development of the conversion market. With a concerted promotion of this market, the total of electrically heated homes in the province would reach 270,000 by 1981, Mr. Pfaff predicted.

Theme of the conference — the conversion market for electric heating — was set by G. F. K. Pepper, manager of residential sales for Ontario Hydro. He pointed out that half a million owners of the 1¼ million existing homes in Ontario are ready to talk about changing their present heating systems.

"That represents a minimum of $250,000,000 which all concerned with the manufacturing and installation of electric heating can share," he said. "And this is in addition to the normal volume of business. For the energy suppliers, the utilities, the successful development of the conversion market will mean as much as $100,000,000 extra revenue annually."

Mr. Pepper called for far-reaching cooperation among all segments of the electric heating industry. He predicted the development in the near future of the specialist contractor who would devote his efforts to the electric heating and cooling field exclusively. He would work closely with the other trades to achieve a one-stop shopping operation for his customers.

The speaker included the following points as being involved in a typical conversion of a home heating system:

(1) Up-grading of electrical service, heating equipment and, where applicable — the distribution system.
(2) Re-insulation where necessary and possible.
(3) Installation of storm windows and doors, structural alterations and modifications where necessary to improve system performance.

He said total costs could range anywhere from a minimum of $200 to a maximum of $2,000.

In describing a unified industry approach to the conversion market Mr. Pepper outlined these characteristics as essential to succes
—province-wide application
—complete line of equipment and i
lations
—inclusion of subordinate trades as w
the heating and electrical trades
—a simple, accurate method of estim
heat loss and operating costs (he
attempts were being made to deve
compact heat flow meter to give i
readings of over-all thermal conduct
—simple, adequate consumer financing
—assurance that the customer gets
and knows it.

"In the past six years, electric heatin
won about 18,000 new homes from the
petition, and everyone knows that not c
these homes was sold because the electric
ing installation was cheaper," Mr. Peppe
"These sales were achieved by strong p
tion which succeeded in selling custome
the conviction that electric heating is
than our competitors' products. There
reason why electric heating conversion
not be sold on the same basis."

Much the same note was struck b
luncheon speaker, Paul C. Greiner, tec
director of the Electric Heating Associat
the United States, who described the c
sion market as "the most fascinating and
plex challenge facing the electric h
industry today".

He outlined the tremendous success e
by the electric heating industry in th
where, he said, the Federal Power Comm
predicts there will be 19,000,000 elect
heated residential units by 1980. By the
this year there will be 2,500,000 — 1
16,000,000 to be built in 15 years. Conv
will have to be substantial, he said, b
good as electric heating is, no one is pre
it will capture 75 per cent of the new
market by 1980.

According to research in the United
the consumer hasn't yet been given an
pelling reasons to convert to electric h
Mr. Greiner said, but he can be sold w

Top photo: *new executive of the Electric Heating Association, left to right, front row: G. A. Smith, Markel Electric, president; Norman Goodis, Goodis Electric, director; Ken Rumble, Rumble Electric, vice-president; Ray Pfaff, St. Catharines PUC, past president; Gordon Marshall, Canadian Chromalox, director. Second row: directors Don Wheeler, Lennox Industries; John Torrance, Etobicoke Hydro; Reginald Dickinson, Canadian General Electric; Ronald Ellecker, Northern Electric; Gary Pepper, Ontario Hydro.*

Centre photo: *These EHA panelists discussed unitary heating systems. Left to right: K. N. Rumble, Rumble Electric, and Leo Temkin, A. F. Baljet, M. T. Loughborough — all of Ontario Hydro.*

Lower photo: *Dr. J. E. Wilson, commissioner, and Stan Bobbette, electrical superintendent, Barrie PUC, are shown at the Ontario Hydro exhibit.*

r appeals. The speaker described the main ems in winning the conversion or "resi- l modernization" market as the need to a greater "willingness to buy" among mers, and to develop a stronger sales- g capability. The homeowner is getting nessage that electric heating is clean, rn and comfortable, but it's just not im- nt enough to make him spend up to 0 to convert.

Greiner said that the consumer's pride home is the best avenue of appeal, and ne which will most easily create the ngness to buy" state of mind. He suggest- theme such as "For the good things in nome, only electric heat is good enough" with the consumer's built-in demand e better way of doing things.

ide in the home as a status symbol is he said, "not fancied. You have it, I it, all homeowners have it. And it is ful. Terribly powerful."

levelop sales-closing capability, he called ge numbers of professional salesmen, g in co-operation with all segments of ating and electrical industries.

e name of this game is salesmanship," , "and the organization that is going to the one that puts the salesman on the . I might tell you with all candor that rd fact is just being accepted in the And in those areas where companies ting salesmen to work, the validity of lings is being proved over and over."

gates also attended three simultaneous s dealing with the general types of heating installations: central ducted ir systems; unitary systems; and hyd- ystems. In each seminar a panel dis- technical aspects of the subject in to the conversion market, and fielded s from the floor.

the entertainment, provided by Ben via Lennick and their company in a led "Conversion Piece", stressed the on theme of a unified industry ap- o the conversion market. □










## Coal Tariff Termed "Tax"

Ontario users of electricity are paying almost $2 million a year in what is basically a tax on imported coal. Addressing the Electric Club of Toronto recently, Henry J. Sissons, assistant general manager, services, said the 50-cent-a-ton tariff Hydro pays on U.S. coal "is nothing more or less than a tax". Since shipments of Eastern Canadian coal are heavily subsidized, this tariff serves no protective function for Maritimes coal producers. He also noted that coke and synthetic rubber manufacturers are exempt from the tariff.

"It is a tax which applies with special severity to Ontario power consumers," he said, "because they are the largest importers of U.S. coal. No other Canadian electrical utility is in this position."

He said that Hydro had co-operated with mines, railways and shipping companies in streamlining coal handling and shipping techniques to achieve significant reductions in coal costs. Removal of the U.S. coal tariff is "one very simple improvement which can and should be made".

Mr. Sissions said the amount of coal Hydro is buying from Nova Scotia represents only a small part of its needs, but it is "the entire quantity of coal which can be supplied to us from that source".

Hydro is buying 2.85 million tons of coal from Nova Scotia over a five-year period at prices competitive with U.S. supplies. □

## Expensive Concrete

Helicopters have been employed to transport men and materials to the more inaccessible sites along B.C. Hydro's $5.3 million microwave link between Vancouver and the Portage Mountain dam on the Peace River. It will permit remote control of the powerhouse and reservoir. Typical is the Black Tusk site 60 miles north of Vancouver on Mount Garibaldi. A twin-engine helicopter hauled cement to this repeater station at an estimated cost of $250 a yard. Initial power from the Peace River project will be transmitted at 500,000 volts to Southwestern B.C. by October, 1968. □

## Engineering and Philosophy

A program aimed at developing a greater awareness of engineering responsibilities and obligations before being registered in the profession may be instituted by the Association of Professional Engineers of Ontario in the near future.

APEO's professional status committee points out that while "there is no doubt that our universities are producing technically competent engineers, it is questioned whether they are producing 'professional' engineers." The committee has recommended that a two-year pre-registration professional qualification course be held which would deal with ethics and philosophy, sociology of organization, career orientation, history of engineering and professional organizations, and the legal requirements of practice.

Candidates would acquire much of the course through seminars supplemented by home study of specially prepared texts. The proposed program has been approved in principle by APEO's council which plans to undertake an experiment during 1965-67 calling for the holding of two seminars. The council is considering the possibility that the course may become compulsory by 1970. □

## On-Site Generation

Rochdale Village, rising out of the old Jamaica racetrack grounds in New York City, is the largest co-operative housing project in the United States. And the electrical industry is watching its progress with interest as the 20,000 tants will not be served by an electrical utility. Electricity is generated grounds at a custom-designed power plant that runs on natural gas. Thi site" power plant distributes electricity through short underground lines 20 of the 14-storey, air conditioned apartments and two shopping c Gas is used directly for cooking, incinerating garbage and clothes dryin

## Pickering Information Centre

An information centre will be established early next summer at Pic Generating Station, east of Toronto, to accommodate the hordes of v who will want to watch progress of North America's largest nuclear-e station. The centre will be used until construction of the two, 540-me units is completed, in 1971.

Somewhat larger than the facilities now in use at NPD and the D Point Nuclear Power Station, the main building will consist of a large ro displays and a 180-seat auditorium for lectures and film showings. Bo displays and films will relate to the nuclear process and to the history nuclear power program in Canada. Because of a need demonstrated at the nuclear power stations, the Pickering centre will also include special fa for visiting groups with professional or technical interests. The public able to view the site from a partly enclosed platform.

## Living It Up

In a recently published "table of affluence", the London Daily Express Canada as world champion in high living — ahead of the United Sweden, Britain, Italy, France, West Germany and Switzerland. The ratin based on a system which relates good living to the percentage of hous possessing central heating, refrigerators, cars, telephones, washing ma and television. Canada placed on top in all categories.

The affluence survey showed 75 per cent of Canadian homes with heating, 96 per cent with refrigerators, 75 per cent with cars, 89 pe with telephones, 86 per cent with washing machines, and 93 per cen television sets. The United States placed second in all ratings but heating, where Sweden was in the secondary spot.

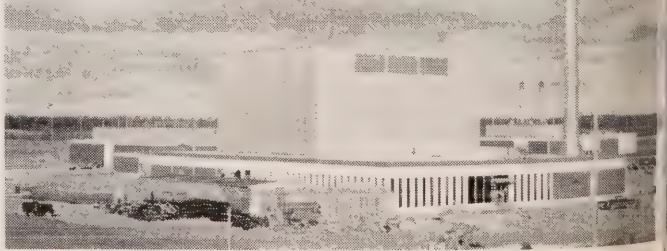
## Whiteshell Reactor in Service

The $14.5 million Whiteshell Reactor No. 1, below, the only operating in the world using an organic liquid as the heat transfer material and water as the moderator, went into service recently. Located in the Whi Nuclear Research Establishment of Atomic Energy of Canada Limited at P 65 miles northeast of Winnipeg, the WR-1 has attracted international at due to the interest in using organic liquids in nuclear power stations.

The testing of organic liquid and other heat transfer materials is part continuing search for ways to reduce the cost of electricity from the Organic liquids used in WR-1 consist of hydrogen atoms linked in unique These liquids have a higher boiling point than water and do not requi pressure piping and pumps to maintain them in a liquid state. Another adv is that the liquids do not react with certain materials design engineers like to use in reactors.

WR-1 has a heat output of 40,000 kilowatts but this heat is not fed electrical generating system. The reactor will be used in a variety of en ing tests related to the development of nuclear power. Experiments w reactor will involve chemical engineering, different types of reactor fu various materials developed specially for reactor structures.

Through an agreement signed in February, the United States Atomic Commission will rent half the WR-1 facilities to carry out engineerin



*They're renting half the facilities.*

l to the U.S. program for development of heavy-water-moderated and c cooled reactors. These are primarily intended to supply heat for con- sea water to fresh water. □

## nors For a Westerner




*night stand.*

marquee announces, Stanley Webster was the star attraction on this n. From Tillsonburg, he is the first president of the Association of Muni- ectrical Utilities from Western Ontario in 16 years, and to mark the event, recently honored at a dinner sponsored by Ontario Hydro's Western Those attending included: from the left: G. M. McHenry, Western Region r; G. A. Barrie and W. A. Pollard, Tillsonburg commissioners; L. W. Smith, n; Stan Webster; W. A. Hollister, commissioner, Mayor C. H. Esseltine, k Young of the Western Region. □

## nicipal briefs

**Brockville PUC** staff were praised for their work in promoting electricity by J. Richardson Philips, chairman, at a recent commission meeting. "The figures show that we spent $4,000 more on advertising this n last," Mr. Philips said, "but our surplus is now $44,000 ahead of last is seems to indicate the system is paying off." Mayor George Smith "money well spent". He said: "Expansion of our electrical heating assists not only those who install electrical heating and this commis- every customer in the city."

**PUC** held a press tour recently during which improvements and addi- the system were pointed out. Among the features of the tour were rvisory control centre, from where seven substations are controlled, training centre for linemen. Demonstrations of live-line maintenance es were carried out for the newsmen.

**scussions** and lectures featured the third Distribution System Planning ce of the Canadian Electrical Association, November 15-17, in Mont- cussion leaders included R. L. Hicks, Toronto Hydro; F. L. G. Askwith, ydro and R. W. Brown, Etobicoke Hydro. Other AMEU representatives ance were H. E. Brownhill, Niagara Falls Hydro; J. G. Sutherland, Hamil- ; R. M. Senyshen, Kitchener PUC and Ray Coles, AMEU.

m to encourage municipalities to consider lighting installations in tennial project plans is about to be launched by CEMA with the Can- ctrical Association as co-ordinators. The program will stress the per- enefits to be derived from an investment in lighting. Advertising and il will be used but the program's success will depend to a large ex- ersonal contact. Local utilities will be asked to assist at this level.

**ugh Electric League** was congratulated by Mayor Gordon Powell for ation and initiative in promoting an "electrical trade fair", held re- a local motel. Emphasis was on electrical heating but appliances were ighted and demonstrations included power tools, lighting and even a ow. Response was such that the fair may become an annual event rough.

**dro** has appointed M. G. "Bud" Drolet as acting superintendent. had been with Ontario Hydro's Sutton ROA before joining the

**yor Stanley Lewis**, Ottawa Hydro-Electric commissioner for 26 years, appointed to another two-year term on the commission. He will con- airman.

**PUC** expects its office administration will ultimately be transferred service centre presently under construction and scheduled for com- pletion in March, 1966. The utility now operates from five different locations. The new building will house a storeroom, garage, warehouse and ultimately, the offices.

**An amalgamation committee** composed of representatives from North Bay, Widdifield and West Ferris has been set up to study the pros and cons of merging the three communities.

**Simcoe PUC** is purchasing land for future construction of new offices. W. D. Stalker, manager, said the meter department will move immediately into the existing buildings on the $27,000 property.

**Dresden Utilities Commission** is running a series of articles in the Dresden News to inform the public about current and future activities. "The utilities belong to the citizens of Dresden," says Fred Bridle, manager, "and I think it's a good idea to tell them how their money is being used."

**Two Metropolitan Toronto** municipalities, Swansea and York Township, are supporting the Select Committee's recommendation that would abolish local Hydro commissions. Both utilities are administered by committees of council. In West Ferris, Reeve George Coombes said that councils have enough work now without undertaking added burdens involved with administration of Hydro services. Councillor McKenny pointed out that persons who serve on such bodies as Hydro commissions often make a lifetime study of the subject and are properly qualified to deal with it.

**Al Lawson**, formerly with Sarnia Hydro, has been named manager of the Strathroy PUC, replacing David Rolston who becomes manager of Goderich PUC. Mr. Lawson, 46, is a member of the Institute of Electrical and Electronic Engineers and he has been active in the metering section of the AMEU.

**Noted sportsman** A. W. Bell, Port Arthur PUC commissioner, died recently. Mr. Bell, chairman of the utility's light and power department, had been a member of the PUC from 1927 to 1962. He was active with the Lakehead community's hockey, baseball and curling teams and was voted sportsman-of-the-year for Port Arthur, in 1956. □

## Sea-Going Giraffe

A device for cleaning holds of bulk-carrying ships, called a "Down Under", has been first installed in the Cape Breton Miner. Claimed to be faster and safer than the old method of lowering men with shovels to clean up holds, the Down Under clamps to the ship's hatch and stretches into the hold like a human arm. Equipped with joints that give its double boom unlimited manoeuvrability, it scrapes the sides and roof of the hold with an attached blade. For final clean-up, the blade can be replaced by a rotating brush combined with a jet of water.

This cleaning aid was invented by Ted Trump, a University of British Columbia graduate, who also designed the hydraulic "giraffe", an aerial basket now used by many utilities for line maintenance. Mr. Trump invented the giraffe in the early 1950s to speed cherry picking in B.C.'s Okanagan Valley. □

## Symbol at Collingwood

Collingwood PUC concentrates on symbols during a presentation by J. B. Brown, symbol co-ordinator for Ontario Hydro. Mr. Brown's presentation of the proposed corporate-image program for municipal electrical utilities includes artwork and



*He's selling a symbol.*

photographs of the Hydro symbol in conjunction with vehicles, equipment, bills, business forms, and other applications. From left are: Mr. Brown; J. Ross Graham, chairman; W. G. Lane, manager; and John Allison, commissioner □

## Inspectors and Public Relations

Approximately 225 delegates attended the twelfth annual convention of the International Association of Electrical Inspectors, Ontario and Quebec Chapter,



*A chat with the general manager.*

held in Toronto recently. Keynote speaker at the two-day conference was Dr. J. M. Hambley, Ontario Hydro general manager, who told his audience that good public relations was more than a question of gimmicks and advertising. "If our public relations is ailing, all the gimmicks, all the advertising, all the symbols are only prescriptions for recovery," he said. Dr. Hambley added that: "The electrical inspector is a public relations man because he is directly engaged in public relations, not in just talking about it."

Dr. Hambley said wiring regulations were "an arbitrary nuisance" to utility customers until they were courteously and reasonably persuaded that the rules are for their own safety. "An inspection fee will seem an unnecessary imposition unless the customer has confidence that, in the process of protecting him from loss and danger, you are carrying out your duties as efficiently, expeditiously and economically as you can."

The conference drew representatives from across Canada, the United States, Jamaica and Japan. Here, Dr. Hambley chats informally with Sei Hayakawa, left, representing the Japan Machinery and Metal Institute, counterpart of the Canadian Standards Association, and Ryuichi Sasaki, who is studying in this country before returning to the institute's electronics department in Tokyo, where he will be responsible for the standards of Canadian exports. □

## press comment

The following editorial appeared in a recent issue of the Beamsville Express. It seems particularly topical in the light of present pre-occupation with government reorganization at the municipal level and prosposals to turn local Hydro affairs over to the councils.

**It Works, So Leave It Alone!** One of the features of municipal administration throughout Ontario has been for long years the general good relations and smooth functioning of Councils and Hydro Commissions. Creation of the Council, the Hydro Commission has looked after the supply and distribution of electrical energy in conformity with council wishes, the provisions of various provincial Acts (notably the Power Commission Act), and Ontario Hydro, which exercises a trusteeship over the local commissions.

Hydro is a specialized function, charged with selling power at cost to the people it serves. Under a philosophy of service fostered by a succession of capable and wise chairmen of Ontario Hydro, hydro commissioners the province over regard their functions as essentially positions of trust and they serve with an enthusiasm for giving the public the most for its money that is uncommon in this day.

There is a school of thought, however, that operates on the idea of not letting well enough alone — change for the sake of change. This school wouldn't agree with the dictum, "If it works, leave it alone." Rather it reminds one of the English savant who, speaking of someone else, remarked that his philosophy was "Let's find out what people are doing, and then make them stop doing it."

A consultant named Murray V. Jones was sent by the Department of Municipal Affairs to study local government in the area around Ottawa and come up with some ideas for betterment. One of his ideas is to put Hydro affairs under a committee of Council. He would also put other local commissions and boards directly under the councils that created them.

This strikes us as about as idiotic an idea as any we have heard. Why do councils create these boards and commissions? To spread the work around, of course. Can you imagine a meeting of Beamsville Council called to select library books for the year ahead? Or to deal with obscure and involved matters that used to be the function of the Planning Board? Or sitting around the council table trying to fathom a proposal for new bassinettes for the maternity wing of the hospital (a job happily given over to the hospital board)?

Or these same bewildered councillors sitting as a hydro committee (some of them probably shareholders of Consumers Gas), formulating details of line of competition against the latest inroads of their competitor?

Come on, Mr. Jones! Do you really think committees of council can ta place of these specialist functions, to perform which it is relatively a lot to enlist good, interested citizens than it is to find councillors at election It takes different kinds of people to run libraries, hydro services and pl authorities. Let's be thankful that this is so, because it gives the peopl municipality a chance to serve in a niche that suits their temperament their personal interests.

It's hard enough these days to find enough good men to elect to mu councils, facing as they do the bewildering array of problems, frustratio criticisms that are the lot of every council. Does any councillor want other things loaded on his back as well?

We find it difficult to believe that this Jones report is being taken se in any quarter, let alone the office of the Minister of Municipal Affair should know the well-proven worth of citizen committees carrying on, som without remuneration, vital municipal functions.

## Second Time Around

The ideal heating system, as far as the motel industry is concerned, which virtually looks after itself. For owners of more than 430 motels tario, the answer is electric heat. Three-quarters of all motel units const during the past six years have had electric heating systems, for a pr wide density of more than 26 per cent.

The real proof of a product is its acceptance the second time a When Mr. and Mrs. Joseph Galotte of Niagara Falls built their 19 unit C Motel in 1962, low cost of installation was the primary reason for h with electricity. A 17-unit addition to the motel was completed this ye the Galottes again specified electric heat. Each unit in the motel has a t stat in the main room controlling the baseboard electric heaters and a ate thermostat and heater in the bathroom.

## New Look at Strathroy



*It combines the aesthetic with the practical.*

Handsome new headquarters of Strathroy PUC were launched in styl delegates to the District 7 OMEA annual meeting attended the official en masse.

After the traditional ribbon-cutting ceremonies, at which Ontario Hydr man W. Ross Strike presided, delegates and other guests toured the pr

Combing the aesthetic with the practical, the new $65,000 sandston ing is all-electric. A heat pump is supplemented by baseboard units an water system in some areas. Electric heating cable is buried in the floo 10-vehicle garage.

## October Energy Production

Primary energy provided by Ontario Hydro in October totalled 3 billion kilowatt-hours, an increase of 8.3 per cent over the same mo a year ago.

For the first ten months of 1965, the total is 35.52 billion kilow hours, up 6.8 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand in Oct was 3.75 billion kilowatt-hours, 1.7 per cent more than the previ month.

The seasonally adjusted total for October represents 44.98 bil kilowatt-hours at annual rates. This is 323.4 per cent of the en demand in 1949.

# off the wires

Our grammatical bloopers have come home to ost on more than one occasion and so we are in- ned to spot errors by others with something proaching glee. We bring the following extract m a news item to your attention:

"An appeal will be made direct to the King of ailand if an elephant that died shortly after be- shipped to Canada is not replaced by a Bang- broker, the director of the Ontario Zoological k said yesterday . . . . "

Conceivably, of course, the report is right and park is prepared to accept a Bangkok broker lieu of the elephant. Either way, it should make interesting attraction.

Seriously, though, the situation will bear watch- Nothing is so dead as a dead elephant and if iland wants to develop its trade along these s its going to have to consider some kind of a 000-mile power-train warranty.

peaking of elephants, some of the metermen vening in Toronto last month for their annual kshop sessions won't be coming back. Pink hants they can do without. A small group of boys were gathered at the bar at convention quarters, checking the service entrance equip- t, going over their notes and doing whatever ermen do in bars late at night — when in ed a real live jumbo. According to reports, took the pledge before learning all the facts. mbo belonged to a fire extinguisher manfac- who was introducing him in conjunction with new symbol and the company representatives staying at the same hotel as the metermen. elephant was bedded down in a trailer and as uffered from insomnia, on occasion, his keep- were in the habit of inviting him in for a cap whenever the facilities were suitable.

t hearing him tip-toe up to the bar, the rmen, we are told, dismissed him at first as f the larger and thirstier members of their . Not until their companion had unreeled the length of his trunk from the suds did they e he was a stranger. It was then that pledges signed, new leaves turned over, lights seen verybody agreed to write their mothers first in the morning.

Fortunately, in this episode, everybody lived py ever after. In tracing the destination of a black cable stretching out into the night, etermen came upon the elephant's trailer. to their delight, they found it cosily heated cally.

Jumbo was welcomed back into their midst and was much rejoicing about the load-building ilities. If every beer-guzzling elephant travel- trailer could be persuaded to use electric , they reasoned, energy sales would soar eryone would continue to enjoy better elec- iving at the lowest possible cost consistent ood service.

One of the many strong points in the argument dissolving local Hydro commissions and their duties over to councils is the de- of the commissioners to Hydro and things



electrical. We think our photo is a case in point.

When William Jennings married Margaret McGinnis at Niagara-on-the-Lake recently, the groom held out for an electric carving knife for the cake-cutting ritual. Bill Jennings? He's chairman of the Hydro commission at Niagara-on-the-Lake.

Where do people from Niagara go on their honeymoons? Montreal was this couple's choice and we'll bet it was an electrifying experience.

■ Television may be dream stuff to some of us but to the Central Electricity Generating Board of Great Britain its a real nightmare. With 12½ million sets concentrated in the tight little island and only two channels from which to choose, all Hades breaks loose at the end of a popular program when Britons scramble for tea and toast.

Depending on the program, the board is faced with an instantaneous pick up usually ranging from 150,000 kilowatts to 600,000 kilowatts which it attributes to the sudden plugging in of kettles, toasters and the like. Severest surge occurred in 1962 at 9:57 p.m. when the "Crazy Gang" ended simultaneously with a BBC play featuring Wilfred Pickles. Rise in consumer demand was 1,300,000 kilowatts — about twice the peak load of the city of Toronto.

The problem is not so much the size of load increases but the speed at which they occur. Standby plants are incapable of increasing output fast enough to match the surge in consumer demand and an elaborate system has been devised to help avoid disastrous frequency drops occasioned by the innocent little idiot boxes in British homes.

Rated highest as a system disturber is the "Ghost Squad" with "Plane Makers" a close second. Dr. Kildare is far down the list as far as the Generating Board is concerned.

Pick up in demand after evening programs is much less noticeable in Ontario thanks to greater choice of channels, smaller concentration of sets and commercial breaks at intervals throughout programs. At the same time, when an NHL game runs late, it's easy to pinpoint the final goal on the demand graphs at Hydro's control centre.

All of which tends to show that its the consumer who calls the tune where system control is concerned. Technical knowledge isn't enough for the control engineer. He must also have an insight into human behaviour if he is going to anticipate requirements.

■ Still in England, we might mention the fishy side of the Generating Board's operations. This involves the use of goldfish to keep the turbines turning in one of the Board's major thermal-electric stations. Brought in five years ago in the hope they would help keep down underwater weeds which threatened to clog the boiler feed tanks, this immigrant labor has extended intervals between tank cleaning from one to three years.

Pay rate of the piscatorial employees is not mentioned but no doubt it's to scale. And fish are also being considered as a by-product of electricity. The Board, at the request of parliament, is looking into the possibility of employing the warm water discharged from its nuclear-electric plants for the rearing and fattening of fish in pens or pounds.

■ From Westminster, it's not too long a jump to Sandringham where electricity is making its presence felt at the Queen's country estate. According to a news service report, the Queen has been able to reduce the cleaning woman staff from eleven to five at her modest 350-room establishment. Her economy drive has been made possible by such labor-saving devices as vacuum cleaners and by the use of electric heaters instead of coal fires in the bedrooms.

A royal cleaning lady, we are informed, makes 60 cents an hour and works a 30-hour week. Not a princely wage, perhaps, but electric heating is certainly fit for a queen.

■ And what do you suppose teenage girls are dreaming about these days besides boys? Electric heating no less. According to a survey by Seventeen, a magazine for teenage girls, most of the 12 million young ladies in the U.S. between the ages of 12 and 20 live in gas heated houses and almost half want to heat their future homes electrically. An even higher proportion would prefer electricity for cooking.

If the teen queens of Ontario are as hep as their U.S. sisters, and who would suggest otherwise, then chimneys are on the way out. And what will Santa do then, poor thing?

■ Speaking of Santa Claus, Christmas and the New Year are almost upon us and perhaps it's time to reiterate and clarify the driving purpose and shining goal of this department — "Off-the-Wires". To inform? Not exactly. To influence in a particular direction? Perhaps not. To sell? No. To entertain? Well, anyway, it's the holiday season and perhaps this is not the time to pin-point driving purposes and shining goals. But it is time to bring warm traditional greetings to each and every faithful reader of this page. Merry Christmas, mother. □

# season's greetings from ontario hydro news

1966

## january

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# ontario hydro news

## january/1966

"With the greatest capital expansion program in the history of Hydro underway, it's full steam ahead to meet spiralling demands."

this issue brings you up to date on developments across the hydro front • operations • nuclear • coal • water • marketing • municipal

# across th
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ontario hydro news
january/66

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ve accept the trend of electric power consumption as a reliable nomic barometer, then buoyant is the word to describe present ditions and short term prospects in Ontario. With the greatest capital ansion program in the history of Hydro underway, it's full steam ad to meet spiralling demands which require us to double our acity every 10 to 12 years.

eak demand in 1965 exceeded the seven-and-a-half million kilowatt l for the first time — reaching 7.8 million kilowatts in December.

inal figures show that our primary energy demand reached 43.6 on kilowatt-hours in 1965 — 7.3 per cent higher than the previous . The growth rate in 1964 was 7.9 per cent, placing both years well ve the long-term average of 6.5 per cent.

n the basis of firm plans by our customers, we anticipate an even er increase in the demand for energy in 1966 than occurred in and 1965.

o meet our customer's power requirements we expect to spend million on capital expansion in 1966, compared with $145 million 965. Gross capital construction expenditure forecast for 1966-70 1 billion.

rrent authorized programs will provide more than 5,000,000 atts of new generating capacity by the early 1970s including o-electric projects, coal burning plants, combustion turbine and ar-electric installations. By the end of 1965 our resources totalled ,000 kilowatts. It now appears that 1970 will be the cross-over after which time we will have more capacity in thermal stations ve will in hydro-electric plants.

mall but unique addition to our generating resources was effected ds the end of the year, and in January, 1966, with the installation oil-burning combustion turbine generators. Located at Toronto and Sarnia, these units have a combined capacity of 95,000 kilowatts. Purchased ready to assemble, these "power packages" will only be used to provide standby service and operational flexibility in case of equipment outage. They are gaining wide acceptance among supply utilities for this purpose and it is intended to strengthen our reserve position with more of these units in the future.

Cool weather and above normal precipitation during the late summer and fall of 1965 brightened the water storage picture in most parts of the province. Apart from the Great Lakes, we wound up the year with water storage on the East System about 10 per cent above normal. West system water conditions remained good during the year and storage is slightly above normal.

Production from our plants on the St. Lawrence and Niagara Rivers, slow to reflect improvement, continued to suffer from lower than normal stream flows although there was a marked improvement over 1964. For the year, lost production attributable to flow deficiencies below long term averages on the two rivers was 3.73 billion kilowatt-hours, representing the equivalent of 1,380,000 tons of coal. The equivalent figures for the same period in 1964 were 4.80 billion kilowatt-hours and 1,780,000 tons of coal.

We did not, in fact, make up all of this lost hydro-electric energy from our own steam plants. Much of it came via our interconnections from neighboring systems where it was available at advantageous rates.

At a time when all such inter-system ties are to the fore in our thinking because of the extensive blackout which occurred on November 9, it may be of interest to review their contribution to modern, day-to-day utility operations. In round figures, Ontario Hydro has purchased 8.85 billion kilowatt-hours of energy in the five years from 1960 to 1964 at a cost of $17,500,000. This produced an estimated saving to Ontario consumers of $6,750,000 because it would have cost

# a report from the general manager



us $24,250,000 to generate that energy in our own steam plant
of this purchased power came from Quebec.

Over the same period, we sold 3.75 billion kilowatt-hours of
energy for a gross return of $8,500,000 and a net of about $4,0
Sales were chiefly to utilities in the United States.

Interconnections also saved us an estimated $2,000,000 in
year period by reducing our line losses. This was achieved b
connecting the transmission systems in Ontario and New Yor
which run in an east-west direction, and allowing power to fl
the path of least resistance from generating sources to load c
both systems.

Other advantages could easily be enumerated but the $12
savings I have outlined will indicate the importance of intercon
in the economics of power supply. Even more important is the i
ment in service security which interconnections provide a
which it is impossible to place a dollar value. Let us not
interconnected operations out of hand because of temporary
Instead, we must squeeze every possible lesson from the blac
strive for the ideal balance between low cost and security.

Before passing on to other aspects of the year's operatio
nition should be given to the outstanding role played by a wi
section of Commission personnel in restoring power and disse
information. Their skill and devotion to the job were bright
a dark evening.

Important revisions in the rural rate system and in municip
costing methods were finalized during the year and it is imp
note that neither will result in an overall increase in reven
Commission.

At the municipal level, the changes will provide greater u
in the bulk power rates paid by the 357 utilities across the

**Subjects ranging from interconnections to corporate identity and from strean**

ch buy their power from Ontario Hydro. They will also have a
-term tendency toward stabilizing municipal retail rates.
his new power costing procedure resulted from a two-year study
ertaken by the Commission, both as part of a continuing review of
of power principles and in response to a request of the Ontario
nicipal Electric Association. It was approved by the OMEA at a series
eetings across the province and came into effect, January 1, 1966.
y streamlining our rural rate system we are simply re-aligning
s with the cost of providing service to the various classes of rural
omers we serve directly. The revision reflects changes which have
rred on the rural scene over the years, such as the growth of
rban areas and the concentration of agricultural production into
farm units. It becomes effective on bills mailed after April 5, 1966.
ural rates will then be quoted in net amounts with a five per cent
payment charge instead of in gross amounts with a 10 per cent
pt payment discount. The practice of using net rates is being
wed by utilities throughout North America, including 36 munici-
lectrical utilities in Ontario.

e continued to enjoy success on the marketing front during the
and I think it is fair to suggest that our efforts in this area are
ted in the cost of power. This has been remarkably steady over
ast six or seven years in the face of strong upward pressure
ed by the rising costs of labor, materials, equipment and interest

e of the greatest contributing factors to this stability has been
owing per customer use of electricity. Average consumption per
ntial and farm customer has risen from 427 kilowatt-hours a
n in 1959 to an estimated 510 kilowatt-hours in 1965, enabling
utilize existing facilities more fully.

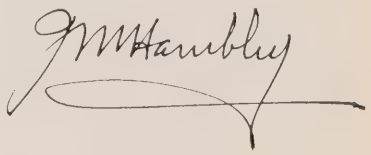
year-end commentary would be complete without some reference to Hydro's "new look" which is destined to become more and more familiar as implementation advances. Introduced in June, the orange and vermilion symbol is only one manifestation of a corporate identity program designed to portray the fact that Hydro in Ontario is an efficient and approachable public service organization as modern and versatile as the energy it provides.

I am particularly pleased at the enthusiasm with which many of the municipal Hydro utilities are embracing this visual communications program because I am convinced it can help weld the many and diverse elements which are Hydro into a single competent force in the eyes of the public.

In conclusion, I will touch briefly on some of the major undertakings we have underway as the new year commences.

We are looking forward about mid-year to the initial operation of Canada's first full-scale nuclear-electric plant, at Douglas Point. During the year, too, construction will gather momentum at Pickering — site of the largest nuclear-electric project anywhere in the Americas. Conventional coal-burning facilities in various stages of development will add 3,200,000 kilowatts to our capacity from 1966 to 1971. And we are also continuing with a hydro-electric development program calculated to augment our resources by almost half a million kilowatts over the same period.

Kilowatt-hours are our stock in trade and we look forward to meeting the surging electrical power requirements of this progressive province with keen anticipation. At the same time, people are our greatest asset and we can only take up this challenge with the continued loyalty and devotion of our employees, the support of our associated municipal Hydro systems and the co-operation of our allies in the manufacturing, distributing and contracting industries. We must all work together for the mutual good. □



**anges are discussed in this year-end report by Dr. J. M. Hambly, general manager of Ontario Hydro.**

# hydro-electric progress

Rushing water continues to play an important role in Ontario Hydro's power development program but the locale is shifting from the North-eastern extremities of the province to the more southerly areas.

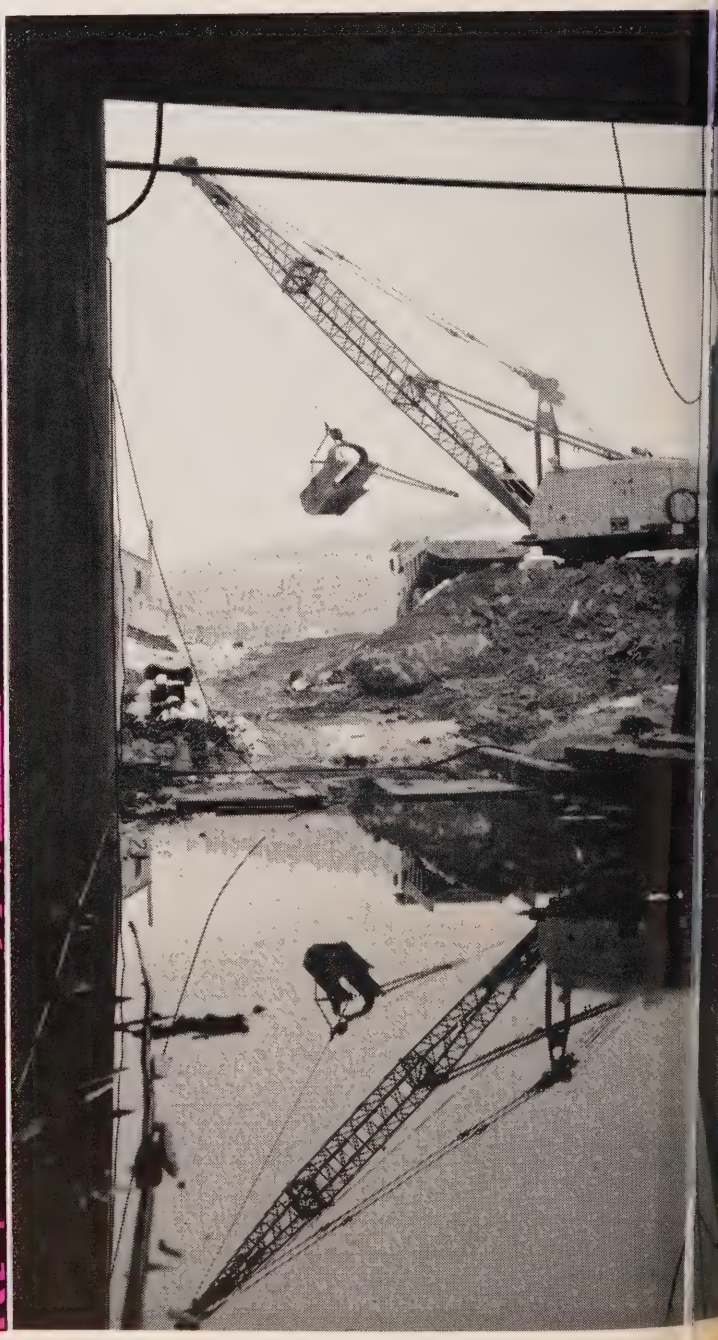
Entrenched in the far northeast since 1958, Hydro construction crews are adding the final touches to this stage of the James Bay power complex which will see 551,000 kilowatts flowing south on the E High-Voltage line later this year. Harmon generating station, wi two, 64,600-kilowatt units, came into service in 1965 and this yea $22.2 million Kipling station, with a capacity of 125,400 kilov will wind up construction activity on this watershed.

Among the highlights of last year's construction in this area the Opasatika River diversion which redirected part of the flow o river into the Mattagami, up stream from the Little Long plant. additional flow in the Mattagami will increase the output of the new plants, Little Long, Harmon and Kipling.

Provision has been made at all these sites and at Otter Rapic the installation of additional units and some undeveloped sites re in the complex. Whether or not these will be utilized will depe the economics of supply which are continually changing with nological advances and system requirements.

Meanwhile, the construction spotlight has swung far to the s to the Madawaska River. Tumbling from its source in Algonquin this torrent joins the Ottawa River at Arnprior, and it is partic adaptable to the development of peaking power. Activity is pre focussed on Mountain Chute where a 139,500-kilowatt power p





eduled for completion in 1967. At present, concrete for the dam is ng poured and clearing of the headpond area is well underway.

Downstream on the Madawaska, two plants which were built in the 0s, Barrett Chute and Stewartville, will be extended at a cost of million. This will bring their capacities in line with the projected allation at Mountain Chute. The "in-step" operation of these plants, le possible by their almost equal capacities, will tend to minimize er spillage and fluctuations in the river level. As peaking plants n could be operated for about two hours a day at full capacity. dawaska construction will be completed in 1969.

lsewhere in the province, Hydro is busy with detailed surveys of eral potential hydraulic sites. Extensive diamond drilling programs expected to start this year at Aubrey Falls and Gros Cap, north of ssalon on the Mississagi River. Plans for extending the George W. ner plant farther down stream are also under consideration and if vere proceeded with, these Mississagi developments would increase em capacity by some 300,000 kilowatts at a cost of more than ,000,000.

two-site hydro-electric development is also under investigation on Montreal River a few miles southeast of Cobalt. About 50 men are engaged in site investigations on both rivers.

And in October the rehabilitation of the Chippawa power canal was finished, ending a two year project which included removal of debris, stabilization and repair to walls and deepening and widening of certain sections. The enlargement of the canal has increased the output of the Beck stations by 11 per cent.

Near Toronto, the finishing touches were being applied to the EHV line which, when completed in the spring, will carry power at 500,000 volts from the James Bay watershed to the Metropolitan area. The 174 mile section of line between Sudbury and Essa transformer station near Barrie went operational at 230,000 volts last June and work is now centered on the final 35 miles of line from Essa to Kleinburg. □

*Dragline is framed by diversion port concrete at Mountain Chute project on the Madawaska where extensive developments are planned or underway. Flying spray is from the spillway at Harmon G.S. on the Mattagami. Development in this area will end with completion of Kipling G.S. this year. Bulldozers are shown at work during rehabilitation of Chippawa power canal at Niagara.*



# power from coal

Coal remains by far the largest single item on Hydro's shopping list. Last year, expenditures in this field amounted to approximately $37,000,000—an all-time record but one likely to be eclipsed regularly as the balance of generation swings more heavily in the direction of coal-burning thermal plants. By 1980, the Commission's annual coal bill could reach nearly $77,000,000.

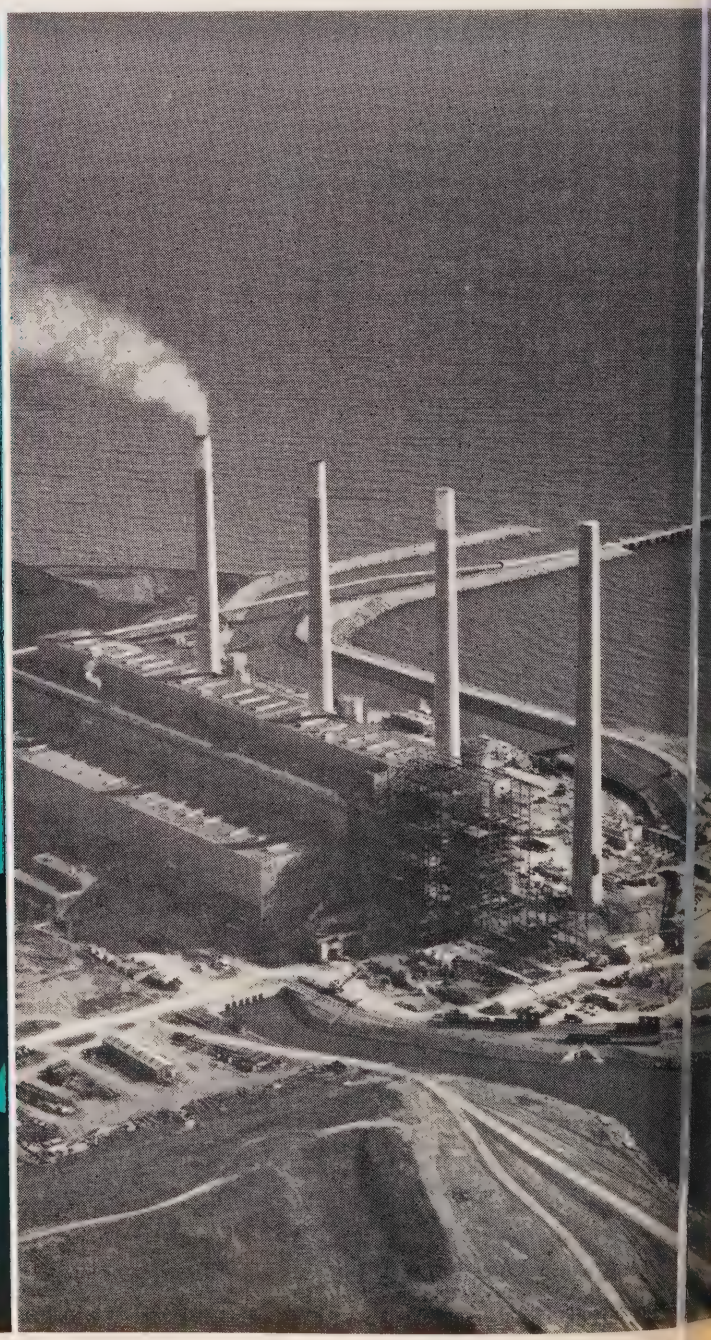
Ontario, a power-hungry province, tends to double its elec energy requirements every 10 to 12 years — a demand far beyon ability of our rivers to satisfy. And so the emphasis now is on burning facilities located close to major load centres and with ade water facilities for cooling and coal transportation purposes.

With the completion of the $220,000,000 Lambton plant i highly industrialized Sarnia area, in 1971, there will be five coal-bu plants in Ontario capable of delivering a total of nearly 6,00 kilowatts. This is equal to the systems' full peak load require in 1961.

At the Lambton site, construction crews moved in last mor begin work on the powerhouse foundations. The huge steel structure will be aluminum-clad and dominated by two, 55 chimneys. Lambton is expected to deliver power in 1968 whe first of its 500,000 kilowatt units goes on the line. Upon comp the station will have a capacity of 2,000,000 kilowatts, equival the combined peak electrical requirements of Metropolitan T and Ottawa.

Output of the Lakeview plant on the Western outskirts of M





tan Toronto continues to grow and four generating units will be peration this winter. A further four units will give the station a acity of 2,400,000 kilowatts by 1968 — among the largest thermal-tric plants anywhere in the world.

t Lakeview, the powerhouse for units five and six is almost com-e and steel erection for units seven and eight is underway. The th and final 490-foot stack has reached full height.

oal-handling facilities at Lakeview are being improved this year the addition of a second conveyor belt from the dock to the coal age area, allowing two vessels to unload simultaneously. A 200- extension to the dock will facilitate unloading in bad weather make it easier to handle large ships.

Vorkhorse of Hydro's coal-fired stations over the years, the R. L. rn plant on the Toronto waterfront continued to meet peak irements during 1965 and filled in as a base load operation for nded periods in the fall and winter. With an installed capacity of 0,000 kilowatts, the plant had an estimated output of approxi-ly 5.2 billion kilowatt-hours in 1965 and consumed almost 0,000 tons of coal.

new type of thermal-electric generation stood ready to contribute to the Hydro grid by year's end in the form of oil-fired combustion turbine generators. Designed to provide stand-by service and more operational flexibility, six units were purchased, each with a capacity of approximately 16,000 kilowatts. Four have been installed at the A. W. Manby Service Centre in Etobicoke Township and two are located at Sarnia's Scott transformer station. □

*With the fourth stack completed, Lakeview G.S. is rapidly taking final shape. Giant coal carrier, Ontario Power, is shown discharging at the R. L. Hearn plant in Toronto. Last year this station consumed nearly two million tons of coal. Like a pipeline in the making, tubes below are really piles for the Lambton G.S. foundation.*



# on the nuclear front

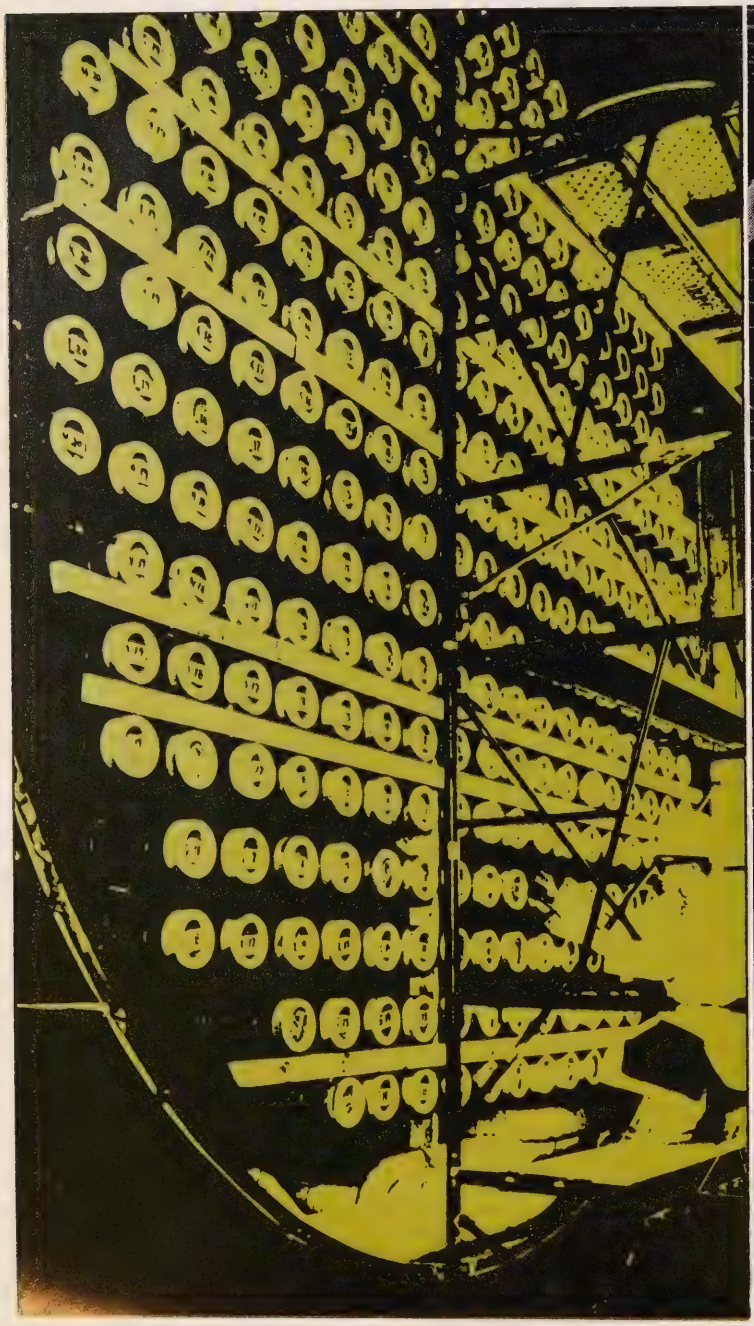
With the launching of the third and by far the largest nuclear power station to be built in the province, Ontario Hydro's nuclear-electric development program is attaining a stature recognized not only in Canada but around the world.

Sound economic principles underlie this growing emphasis on fission-based generation. "Without nuclear development in the ahead, our coal imports and expenditures of United States d would reach most unhealthy proportions", explained H. J. Sis Ontario Hydro's assistant general manager, services, at a recent ga ing of The Electric Club of Toronto. "The uranium with whic nuclear plants will be fired is a native Ontario product."

Experience with the construction and operation of NPD, the 20 kilowatt prototype plant, and with the design and construction c Douglas Point Station, of 200,000 kilowatts capacity, indicates th naural uranium, heavy water-moderated type of plant empl 500,000 kilowatt units will provide base load energy at a cost competitive with coal-burning plants in the Hydro system.

The decision in 1964 to build the Pickering nuclear-electric the largest in North and South America, was based on this prepos The 1,080,000-kilowatt development in Pickering Township, 20 east of Toronto, will be over 50 times as large as NPD which be Canada's first operational nuclear-electric plant in June, 1962.

Last year, construction crews moved onto the Pickering sit began to erect temporary buildings. In December, pile driving for the first of the two, 155-foot high reactor buildings. An





mer, the public will be able to view the progress and learn details his mammoth $266 million project from an information centre and ervation platform soon to be erected. The Pickering station, with units, is expected to deliver first power in 1970.

he intermediate step between NPD and Pickering will be completed year at Douglas Point, between Port Elgin and Kincardine, on shores of Lake Huron. The $81.5 million Douglas Point Station add 200,000 kilowatts to the East System — enough power to t the demands of Windsor and Kitchener. Built by Atomic Energy anada in co-operation with Ontario Hydro, Douglas Point will be ated as a regular component of the power grid. More than 600 adian companies have been involved in the project at which testing ne CANDU reactor components was carried out during the year.

s at NPD and Pickering, the Douglas Point plant will operate on ral uranium and use heavy water as the heat exchange medium. is on site and deliveries of heavy water have begun. The first al computer to be used to control a Canadian generating station been installed at Douglas Point.

ith the die cast in favor of extensive nuclear-electric development, need for properly trained staff became apparent early in the development stages. Temporary training facilities were replaced last autumn with a one-storey H-shaped training centre adjacent to NPD. The $225,000 building, which includes five laboratories and four lecture halls, will not only ensure an adequate number of skilled employees for Hydro's nuclear power stations, but will help qualify trainees from overseas countries with Canadian-type reactors.

It is estimated that in 10 years nuclear capacity will account for 3.2 million kilowatts of Ontario Hydro resources. □

*Initial operation of Canada's first full-scale nuclear-electric station, at Douglas Point, will commence this year. Worker is checking turbine blades on the 200,000-kilowatt unit. Exterior view features reactor building. Work is also underway at Pickering G.S., near Toronto, largest nuclear power project in Western Hemisphere. Pile driver is at Pickering.*



# accent on marketing

Further encouraged by marketing gains last year, Ontario Hydro and the associated municipal utilities are raising their sales sights to new levels for 1966 and beyond.

Modern sales and advertising techniques coupled with extensive educational and technical training programs will continue to aid in the bid to obtain a full share of the energy market for electricity. At s are continued low electrical rates through fuller use of facil developed by Hydro and the utilities.

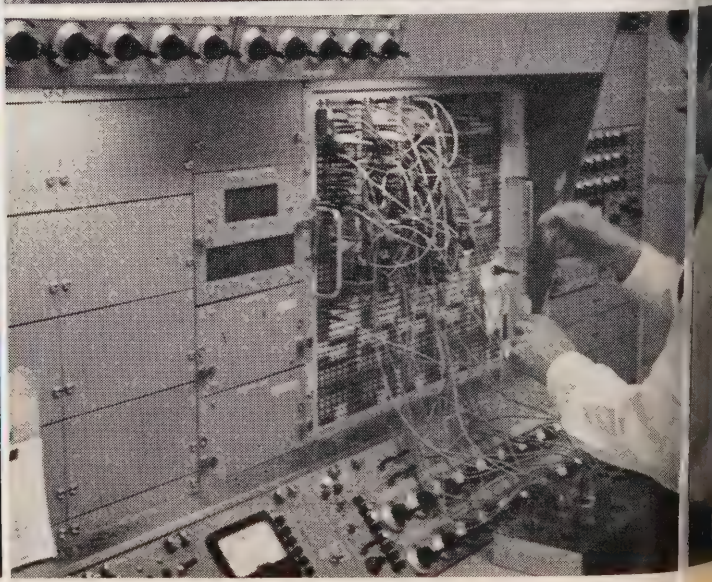
Targets and plans as far-reaching as those developed — and tinually reviewed — by the advertising and sales co-ordinating c mittee of OMEA-AMEU-Ontario Hydro must necessarily extend be any single calendar year. At the same time, flexibility to meet char circumstances and situations must be maintained.

Hydro and the municipal utilities will be striving in 1966 tow the addition of 9,500 electrically heated homes, 120,000 electric w heater units, 60,000 kilowatts of commercial heating load, 20 kilowatts of commercial cooking load and the raising of farm sumption to an average of 766 kilowatt-hours a month. Farm sumption in 1965 is estimated at just over 700 kilowatt-hours.

Preliminary figures indicate that electric heating was install almost 90 per cent of new motels, and 13 per cent of new apartn in 1965. Residential installations during 1965 were 15 per cent h than the previous year, a feature being the rapid increase in the nu of conversions to electric heating. These are expected to represe per cent of all-electric home installations by 1967.







ɔmmercial installations of electric space heating showed a 40 per increase last year, while use of controlled environment for poultry other specialized farm operations is proving of great impetus to ro's agricultural sales.

n integrated Hydro advertising program will continue to support all sales efforts in 1966, making use of all media to reach both ral and specific publics. Last year's advertising campaign won na- l and international honors in the television and newspaper fields. ıcouraged by the success of last spring's dishwasher promotion, ıed by some of the sponsoring manufacturers with increasing sales s much as 40 per cent, Hydro and many of the utilities also took in a fall laundry equipment promotion. An electric clothes dryer ɔaign is being proposed for this year.

her promotions will include architectural and garden lighting, and -operation with the Canadian Electrical Association there will be ams to develop the market for battery-operated industrial vehicles, ewly developed (IES) study lamp and electric blankets. Emphasis continue on the supplementary heating market and testing of the ıtial for de-humidifier sales will be undertaken.

their continuing effort to upgrade salesmanship and product-knowledge, Ontario Hydro and the utilities launched a far-reaching series of seminars for employees in the fall. The program, to run at least two years, also strives to broaden the knowledge of non-sales personnel so that they can add their weight to the total selling job. On the technical front educational programs for such Hydro "allies" as contractors, architects and realtors are continuing. □

*Hydro's award-winning electric heating TV commercial featured two boys boasting about their homes. A computer was used to help analyse consumption patterns of water heaters. Dusk-to-dawn lighting for farms and other outdoor applications enjoyed continued success during the year. And electric heating made news by its remarkable acceptance on all fronts. Comfort as well as justice are meted out at the electrically heated courthouse in L'Orignal.*





# municipal highlights

With the advent of 1966, municipal untilities in Ontario could take heart at growing support for their efforts to retain long-established principles of Hydro administration in the province.

Resulting from two government-sponsored studies, recommendations to abolish elected Hydro commissions and have their affairs administered by committees of municipal councils were strongly challenge the utilities acting through the Ontario Municipal Electric Associ during the year.

Among the points emphasized by the OMEA in its counter-repres tions was the necessity for keeping revenue-producing services sep from tax-support municipal functions so that sufficient revenue w continue to be plowed back into electrical systems to maintain service standards. Superiority of the present system in coping competition from other forms of energy was another point pr home by the Association.

Support for its stand came from the quarter where it counted the municipal councils. To assist the Municipal Affairs Depart gain a true assessment of the overall municipal attitude to the re mendations, OMEA requested all councils in the province to ex their feelings in resolutions to the Minister.

"By the end of the year more than 40 councils had forward copies of their resolutions," states Arthur K. Meen, chairma OMEA's legislation committee. "Without exception they re-aff confidence in the existing Hydro utility set-up, and could see no r for change."








pecial and annual meetings of OMEA districts during 1965 over-lmingly voted for a new power costing system which became ctive on January 1. Representing a milestone in the history of ro administration, the system establishes more uniform power rates itilities across the province.

he continued success of utilities in their marketing offensive, ertaken in conjunction with Ontario Hydro and other branches of electrical industry, could be gauged from monthly consumption per lential customer. It was estimated at 518 kilowatt-hours last year — rom 508 in 1964 and from 380 in 1954.

t the technical and administrative levels, the utilities continued programs of development and improvement. Through the offices ie Association of Municipal Electrical Utilities, often in co-oper-with Ontario Hydro, they dealt with such diverse matters as new pment and job techniques, rates and accident prevention, load es and office procedures.

o preserve the rich heritage of Ontario's electrical pioneers and to rd the development of the utility industry, the OMEA-AMEU's joint ennial committee revealed plans to establish a Hall of Memory at ara Falls, to be completed in 1967.

More and more utilities announced their intentions of adopting the new visual identity program as the year progressed. Among the larger ones which have applied for use of the Hydro in Ontario symbol are Toronto, Windsor, Chatham, London and Barrie. Widdifield and Gloucester townships — 1965's newcomers to the Hydro family of municipalities — were among the earliest of more than 30 utilities launching symbol programs.

The number of municipal Hydro systems in the province totalled 360 at year's end. However, three utilities in the Windsor area were absorbed by annexation January 1, 1966. Talk of amalgamations in other areas of the province suggests that further reductions may occur in the future. □

*It was an eventful year on the municipal front as two presidents can attest. They are Dr. R. H. Hay (with gavel), president of the OMEA, and Stanley Webster, who heads the AMEU. Among the highlights was the introduction of the new Hydro in Ontario symbol being examined by District 5 members. Several utilities including North York Hydro, shown, opened new headquarters.*



# harmony at the lakehead

by PAUL CHISHOLM

Civic tweedledum and tweedledee of Ontario's vast northwest, the twin cities of Port Arthur and Fort William are increasingly cozying up to each other. Co-operation is proving more effective than one-upmanship in overcoming the host of problems arising from the phenomenal growth of both cities and surrounding areas.

Renowned for their intense rivalry, with sometimes Gilbertan overtones, the two cities are geographically undistinguishable to the visitor. New industry, shopping centres and housing developments have all but filled the once-open spaces of the "inter-city" area which has been gradually annexed from either side. Four miles — and much discussion — continues to separate the two downtown areas.

Serious attempts by each city to annex the other are now a matter of history. The most recent public expression on amalgamation was conducted eight years ago — Fort William voting against the idea and Port Arthur approving one week later.

Attention is again focused on the question of amalgamation with a recently-launched study by the Ontario Municipal Board on the possibility of regional government for the area. At the same time, the Ontario Police Commission is investigating the pros and cons of combining the two city police forces, while the two councils have signed an agreement with the province for the construction of a multi-million dollar expressway through the municipalities.

And rivalry is no longer being allowed to interfere with progress. A $31,000,000 kraft pulp mill at Fort William, multi-million dollar expansion at a Port Arthur paper company, and a huge chlorine-caustic plant in the area highlight an extensive construction program which is reflected in a record number of housing starts. New highs in grain and mineral shipments through a joint terminal are also being chalked up.

Population of the two cities now exceeds 100,000 and is increasing steadily. Essentially, they are the same size.

Politicians — professional and otherwise — long ago fastened on the word "Lakehead" for its splendid neutrality when referring to the




*Increased grain and mineral shipments through joint Lakehead terminal have shattered tonnage records during last two seasons. Electric living is promoted by archway marking boundary of two cities. Port Arthur operates small generating station to help meet peak demands. New buildings were recently opened at Lakehead airport.*


PATERSON & SONS


WELCOME TO PORT ARTHUR





## growing pains are helping port arthur and fort william to forget their inter-city rivalry

two cities. A boon to headline writers, the designation placates both sets of citizenry and serves very nicely when organizations in the two cities combine.

"For instances" include the Lakehead Harbor Commission, Lakehead Conservation Authority, Lakehead Builders Exchange, Lakehead Electrical Association, and Lakehead Chamber of Commerce. All perform with a harmony matched only by that of the Lakehead Choral Society accompanied by the Lakehead Symphony Orchestra.

Such unity, however, its not always born painlessly. When the separate industrial commissions in the two cities decided last year to unite in their mutual quest for new industry and area promotion, the title posed the least of the problem.

But Solomon might have blanched at the prospect of choosing a site for the new office. After much debate it was suggested that it straddle the "border" on the intercity highway. Lack of suitable land on the Port Arthur side dictated a site a few yards within Fort William. Staff of the Lakehead Industrial Commission includes a manager for each city and the commission has the same postal box number in each of the two municipalities.

The naming of Lakehead Airport, where an $800,000 terminal-operations building was recently opened, is another instance of harmony after hostilities. Developed by the city of Fort William in 1937, the airstrip was used for airforce training during the war and was later bought from the city by the Department of Transport.

To the joy or chagrin of the citizens, depending upon where they called home, a new route map published by TCA designated the airport as Port Arthur. A lively exchange of letters corrected this intolerable error but even today, some maintain, Fort William-Port Arthur passengers are easily recognized for the manner in which they hold their breath as flight destinations are called.

Among those pointing the way to improved Lakehead togetherness are the distributors of electricity in the two cities. While keeping a competitive eye on each other, Port A Public Utilities Commission and Fort Wi Hydro-Electric Commission have long tised a policy of co-operating for the con good.

This policy ranges from interchanging and equipment at times of emergency to ing the cost of sponsoring daily news b casts on TV and jointly taking part with tario Hydro in displays at exhibits and promotions. Both utilities, members o Hydro family of municipalities, are meeti creased demands for power averaging ap mately seven per cent annually.

Electrical service in the two commu was pioneered toward the close of the las tury. As early as 1885 Port Arthur boast first electric lights west of the Great Lak was among the first municipalities in the ince to be supplied with power by O Hydro.

The seemingly unrelated action of Arthur civic officials impounding a Ca Pacific Railway train during a tax dispu in the 1800s played an important part i ring hydro development. As an upshot



ıte, the CPR moved its roundhouse and ıshops to Fort William, confronting Port ur with the prospect of losing a sizeable ent of its population which was on the ıad's payroll.

rt Arthur promptly inaugurated a street ay system, powered from a steam station ı it built on a site at nearby Current River. r a charter permitting the new system to ıte into Fort William, streetcars originally ıs far as the newly-located CPR shops. oad employees were offered free trans- tion provided they continue to reside in Arthur.

eetcar lines were gradually extended er into Fort William, but with civic pride asingly involved, Fort William residents beginning to trumpet for their own trans- tion system.

complicated harangue ultimately refereed ovincial authorities, in 1908, resulted in William buying the system within its lary plus half the rolling stock. Under the ıre principle, the entire transportation ı was managed by a joint committee of o councils.

But each kept an eagle eye on the other. Analysis of operating costs took into account such factors as the number of bends in either city and their relation to wear and tear on rolling stock, while the number of accidents were studied geographically.

In 1914, newly-formed Port Arthur PUC was appointed to operate transportation within the city boundaries. The system in Fort William was entrusted to a committee of council.

Today, of course, the services are conducted with modern bus fleets and each operates to the other's boundaries. An independent enquiry last year ruled out the suggestion of amalgamating the two systems as "too expensive."

"Rivalry between the two cities is by no means all bad," declares Arthur Taber, manager of Fort William Hydro. "We are both so far away from other centres that the stimulation is needed, although I'll agree that in some cases it can prove costly. Competition is one reason for the absence of unsightly distributions systems from the streets of both cities. Fort William was laid out with rear lanes in its early development, a progressive step at the time. Similarly, Port Arthur has a system of rear lot easements."

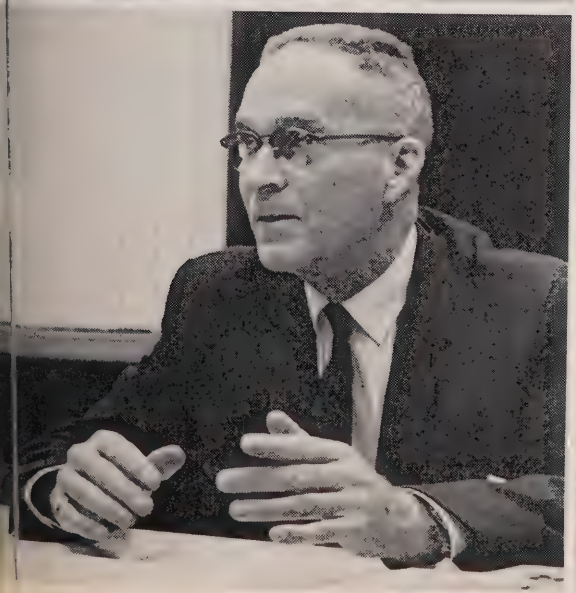
Besides responsibility for Hydro, transportation and waterworks, Port Arthur PUC is unique among utilities in Ontario in that it operates the city's telephone system. An 1,800-kilowatt hydro station at Current River, the successor to the early steam plant which powered the street railway, is also operated by the utility to help meet peak demands.

Manager Edmund Vigars of the Port Arthur PUC also sees the positive side of inter-city rivalry.

"We have more in common than most", he says, "rivalry just keeps us on our toes. You'll notice that our differences are put aside in matters that really count. We keep our bickering in the family — and don't let any aliens from outside the Lakehead try to step between us." □

*Lighting is used to good advantage in Fort William Hydro office, left, and to highlight Port Arthur PUC building. Utility managers Arthur Taber, top, Fort William, and Edmund Vigars, Port Arthur, say that inter-city rivalry has not been without its benefits.*







# doctor grant gives us the cold facts

## if you catch
## –keep it to you

Life, some savant has said, is made up
sniffles and smiles — with the sniffl
dominating. We'd have to go along w
if he had Canadians and winter in min

The all-too-common cold is the chief
work absence through illness in the
World. At Ontario Hydro last year, dis
the respiratory system including co
fluenza, tonsillitis and pneumonia ac
for 27 per cent of all absences of five
more due to sickness. This represente
to Hydro estimated at $400,000. In cc
if you'll pardon the pun, this is a seric
ness, and it does not take into accour
venience and loss of production —
nothing of the discomfort of the strick

Having established its prevalen
statistics suggest the "average" per
expect two bouts a year, what al
cure? Ask the best qualified doctor
find and he will probably give you sor
latest suggestions which may clear y
14 days. Use nothing but the "good
ment", he will advise, and it will lik
around for two weeks.

Not too helpful, perhaps, but a
has yet to be developed. At the first
cold, use some of your favorite garg
hot drink and go to bed early, getting
rest as possible. It would be wise to k
of your temperature. If it should ris
symptoms become severe, consult
sician.

If you decide to treat yourself, the
are as many and bizarre as the sympt
the symptoms and concentrate on k
your resistance by extra rest and no

in-type tablets may be used for dis-
ort but no other medication should be
unless prescribed by your doctor.
vention is something else again and de-
steps can be taken to reduce your chances
tching a cold. The wise old adage "An
of prevention is worth a pound of cure,"
have been coined with this infection in

the last few years, medical researchers
been training their microscopes on the
or causes of colds. There seems to be
l agreement that a cold is a form of
ious disease which is transmitted from
rson to another by personal contact or
t infection of the atmosphere. In Great
, research teams have been successful in
g the cold virus or viruses. But some
l convinced that bacteria are also respon-
n some cases and still others feel that
colds are, at least in part, due to
s.
d on the virus-bacteria infection theory,
ber of vaccines have been developed
appear to be useful in cold prevention.
here are no accurate statistics avail-
ysicians' opinions, based on experience
ese vaccines in selected groups, are
Some feel that they eliminate colds in
0 per cent of people, decrease severity
t 25 per cent and have little or no
n the remainder. Others are not so
ic.
elieve vaccines may well be worth
one is subjected to frequent colds. It
e wise, in this case, to ask the family
n for the usual injections . . . two in
about four weeks apart and a booster
ring . . . of influenza virus vaccine .
tario Hydro, for the sake of conveni-
ence, head office area employees can receive their innoculations from staff physicians if they so request. The innoculations may also provide protection from the "flu" as well as colds.

There is another type of cold vaccine which can be taken in tablet form by mouth, but I doubt if it is as effective as the virus vaccine. However, it may prove useful for children who forcibly object to a hypodermic. Your family physician will be able to give you more detail about this preparation.

Other effective preventative measures can be taken to protect you and your family from the occurance and spread of colds.

Diet is all-important . . . and should include a well-balanced, nourishing regimen with plenty of fresh fruits and vegetables. A glass of fresh orange or grapefruit juice or the fruit itself should be taken daily. And children should have a preparation containing Vitamin D to supplement their diet. This is particularly important during winter months.

A wholesome diet is adequate for adults without vitamin supplementation. There is no harm, except to your pocketbook, in taking a standard one-a-day "multivitamin" capsule from October to May on the chance that there may be some dietary deficiency.

Adequate sleep is also necessary to ward off colds. An average of seven hours sleep nightly is a good thing for adults with proportionately more for children. This will also help to keep body resistance at a high level.

Fresh air in the bedroom at night is desirable and even on the coldest, blustery nights, you can, of course, be quite cozy if you "sleep better electrically" with an electric blanket.

Adequate humidity in the home and office is essential to the health of the delicate mucous membranes of your nose, throat, and breathing passages. The humidity should not fall below 30-40 per cent. In most of our homes and apartments with central heating the humidity during winter months is well below this level. This lack of moisture causes drying of the tissues in the nose and throat and these regions become susceptible to infections. By installing an efficient humidifier in your home, you not only prevent infection, but you may save on your fuel bill as well. When the humidity is up the temperature of the house may be kept lower and still be comfortable.

Chills should also be avoided by dressing warmly enough to suit the weather and the occasion, rather than fashion. Get a reasonable amount of fresh air and exercise all year 'round.

And by all means avoid unnecessary exposure to those who have colds or influenza. If you have one yourself, cover your nose and mouth when coughing or sneezing. It has been estimated that every time you sneeze you spread "cold particles" up to 20 feet; coughs spread cold germs 12 feet, and plain, ordinary talking sends them as far as eight feet.

Like everything else in this world, colds benefit some. They contribute to the support of the tissue paper industry; they keep druggists and nose drop producers from bankruptcy; they provide some with an easy excuse to stay home from work or school and occasionally keep the most talkative woman from making a sound.

Mostly however, we could do very nicely without them . . . particularly as they sometimes lead to more serious complications like influenza or pneumonia. A few simple measures such as these may help to see you and your family through the winter season free from sneezin. □

# keeping tab on kilowatt hours

## workshop helps keep metermen abreast of latest developments

Ever-increasing loads and endless advances in technology not only highlight the importance of the meterman in utility operations, but make it imperative for him to keep abreast.

The wide recognition accorded these concepts was reflected by the 93 municipal utilities who sent delegates to the fourth annual Metermen's Workshop of the Association of Municipal Electrical Utilities, held recently in Toronto. At the first workshop, in 1962, 67 utilities were represented and the number has risen each year.

Recognition also came from AMEU President Stanley Webster of Tillsonburg, who said in his keynote address that the executive was "very proud of your contribution to the electrical industry."

The need for constant improvement led, 30 years ago, to the formation of the Western Ontario Metermen's Association in Chatham. The idea soon spread to other parts of the province and, as time passed, the various groups moved toward amalgamation. In 1948, the Metermen's Council of Ontario was formed which, in 1960, joined the AMEU under the Engineering Board.

"This was a good move," Mr. Webster said. "It has brought all segments of utility operation into one stronger organization. I also believe the metermen are pleased with the operation of the Metering and Service Entrance Equipment Committee, now that it has had time to demonstrate what can be done."

From the first Workshop, the theme and the method has been informal discussions for the exchange of information so that innovation and advance in each meter shop would benefit all. The Workshops feature displays of the latest equipment and layouts of service entrance connections.

Increasingly, they bring metermen into contact with manufacturers and representatives of Ontario Hydro, the Department of Transport and the Department of Trade and Comme

"In this setting," says Don Smith of Ki ton, committee chairman, "without haste without red tape, the metermen can go things with government people which woul warrant a lot of correspondence. They ge know each other's problems . . . even coffee breaks are of value."

The tightly-scheduled two-day worksh have always involved small group discuss followed by larger assemblies for pooling formation.

This year, the men sharpened their pe for a special instruction session presente two parts by John Dawson, manager of D ville PUC. Using charts and slides, Mr. Dav demonstrated cross-phase meter reading way of verifying connections and gainin sight into the nature of customers' loads.

Mr. Smith said this delegate-particip feature was well-received and added intere

## meter carri

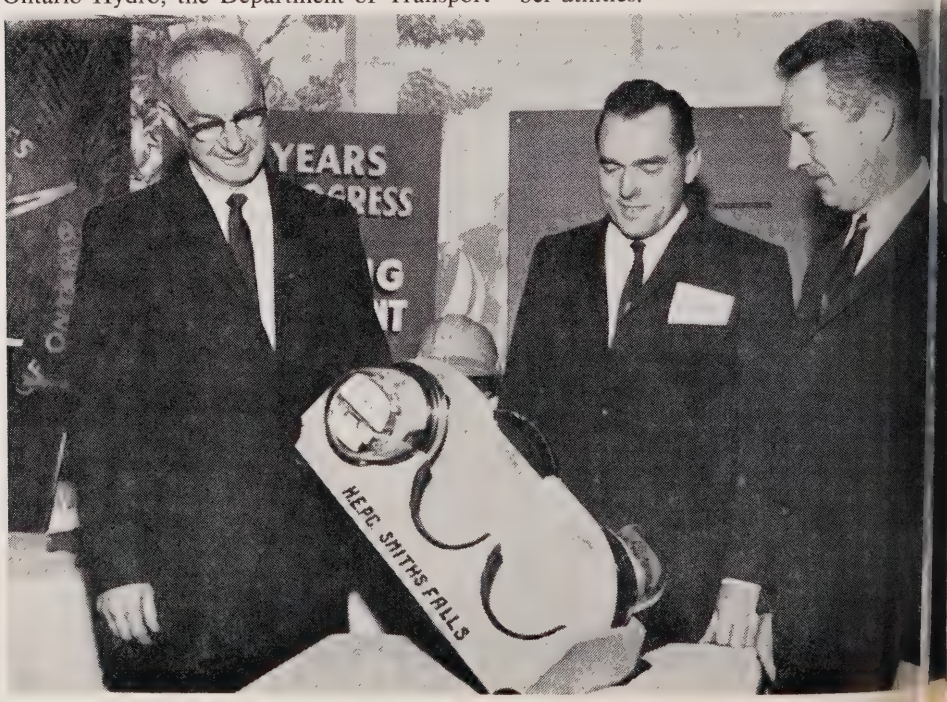
The exchange of ideas is a key concept o Metermen's Workshops, but G. T. ("Spa Loucks of Smith's Falls Hydro brough idea that got more attention than he barg for.

For less than $5, labor included, Spar vised a carrier for meters not unlike a man's hand-held rack. It holds six meter tip better than 45° off horizontal without ing any contents, and its handle is s enough to support the inventor's weight.

When Bill Dukelow and Mo Shepherd Electrical Utilities Safety Association sa device, they quickly sought out its creat

"Maybe it sounds strange," Bill relates a good number of injuries to metermen from dropping the meters. They can fr a toe, and broken glass is a hazard."

EUSA intends to pass the word to all ber utilities.




*Metermen sharpened their pencils for a session on cross-phase meter reading conducted by John Dawson of Dunnville. Inventor G. T. Loucks of Smith's Falls Hydro demonstrates his meter carrier for Bob Edwards, Guelph, and Bill Dukelow of the Electrical Utilities Safety Association.*








## New Nest for Nipigon



*With the snip of a ribbon — a home of their own.*

It's been over 40 years since Nipigonians first saw the light but now their Hydro staff spends every working day in church.

Ceremonies marking the opening of the handsome new Hydro headquarters in a renovated church were held at the end of November — two weeks and 41 years since the original 16 streetlights were switched on for the first time in this Lake Superior community, 70 miles east of Port Arthur.

Growth dictated the move, as Nipigon Hydro Chairman Florien Zechner pointed out in a brief address. At the end of 1925, he said, there were 111 customers and sales amounted to $3,156. By 1964, 788 customers were being served and power sales topped $100,000.

"Our house", (in the municipal office) "just got too small", he said, "and the old church building across the street has long been a lonely place. With the blessing of our Good Lord already in the building, the commission felt the location was good and the price was right. Renovation was accomplished at a minimum of expense with much of the work carried out by our own staff."

Electrically heated throughout, the new Nipigon Hydro Commission building features high-level lighting, a display area in the customer service section, offices and a conference room. Surplus space will be rented until required.

The customary ribbon was cut by I. C. Ingimundson, manager of Ontario Hydro's Northwestern Region, assisted by Reeve Gordon Waghorn, left in the photograph, and Mr. Zechner. Irene Schoales, office secretary, looks on. In pointing out the relationship between per customer use of electricity and costs, Mr. Ingimundson noted that average monthly domestic consumption in Nipigon rose from 21 kilowatt-hours in 1925 to 571 kilowatt-hours in 1964. Over the same period, he said, the average cost per kilowatt-hour dropped from 7.23 cents to 1.04 cents.

Jim Tarling, consumer service superintendent, Northwestern Region, pointed out that there were nine all-electric homes and eight electrically heated commercial establishments in Nipigon. He felt this success was due, in large part, to the excellent working relationship between the missioners and staff of the Nipigon utility.

Among the guests at the official opening were Jack Phillips, Schre president of District 3 OMEA, and John Gilmore, Port Arthur, district dent of the AMEU.

## Water Resources Study

Jack B. Bryce of Toronto, hyraulic engineer with Ontario Hydro, has named by the Ontario Water Resources Commission as one of three Or appointees to the provincial-federal committee which will co-ordinate of Northern Ontario's water resources.

## New Hydro Training Centre

Ontario Hydro has announced approval of plans for a new staff trainin conference centre in Mono Township near Orangeville. Constructio start in late spring or early summer and the facilities are schedule completion in 1967.

For the past 12 years, Hydro has operated a conference and develo centre at Niagara Falls, and utilized rented facilities across the pr for other training courses.

The 196-acre Mono Township site will enable Hydro to centrali residence staff training in one location. The site is five miles nor of Orangeville, less than 40 minutes' drive from Toronto Internation port.

The new centre will have a low, rambling, ranch-like appearance th effective use of several levels on the sloping site. At the centre complex will be a two-storey building incorporating a 200-seat audit dining and recreational facilities. Three adjacent buildings will p living quarters for nearly 100 employees taking courses.

Another building, set apart from the main complex, will be for and technical instruction, and will include a laboratory and class workshops and demonstration areas. Among the many training progr be conducted entirely or partly at the new location will be manag supervisory, forestry, line maintenance and a variety of other trad technical courses.

The buildings themselves will be primarily of concrete block const with natural wood exteriors.

## A World of Difference

"Electricity Makes A World Of Difference" will be the theme of this National Electrical Week to be held in February. And Winnipeg will key "Electrical Day" city for 1966, on February 10. Dr. J. M. Hambl tario Hydro's general manager and past president of the Canadian El Association, will be the main speaker at a special luncheon at th Alexandra Hotel on that day.

National Electrical Week is scheduled to coincide with Thomas E birthday.

## Rural Rate Changes

Ontario Hydro has announced a streamlining of its rural rate syste result of continuing development in the rural areas of the provinc the first major revision in rates for regular rural electric service in t 12 years.

In announcing the change, Ontario Hydro Chairman W. Ross Stri

"The revisions are designed to adjust the rate structure to conditions, re-align rates with the cost of providing service to classes of customers and simplify dealings with consumers. There no overall increase in revenue to the Commission as a result of t adjustment."

Rates will be quoted in net amounts with a five per cent late charge instead of in gross amounts with a 10 per cent prompt payn count. The practice of using net rates is being followed by ma utilities.

The changes will take effect on bills mailed after April 5, 19 rural customers of Ontario Hydro will be notified directly by ma revisions. Customers of the municipal electrical utilities in the Hyd will not be affected.

## ebec Project a First

d's first in extra-high-voltage (EHV) transmission was established by c Hydro in November with the placing in service of a 735,000-volt deliver power to the Montreal area from new generating stations in rtheastern wilderness of the province. Scheduled for full operation his year, the 365-mile Quebec line is the first of three such EHV s which will carry power from a vast hydro-electric complex under uction.

resent it carries 500,000 kilowatts from the uncompleted Manicoua- nerating Station No. 2, north of Baie Comeau. By 1972 the new EHV ill deliver the full 5,504,000 kilowatts produced by seven generating s under construction on the Manicouagan and Outardes rivers. The power complex will cost in the vicinity of two billion dollars.

s 735,000-volt transmission line is without precedent," declared Que- emier Jean Lesage at a switch-throwing ceremony in Montreal. "We power highway on which the eyes of the engineering world are

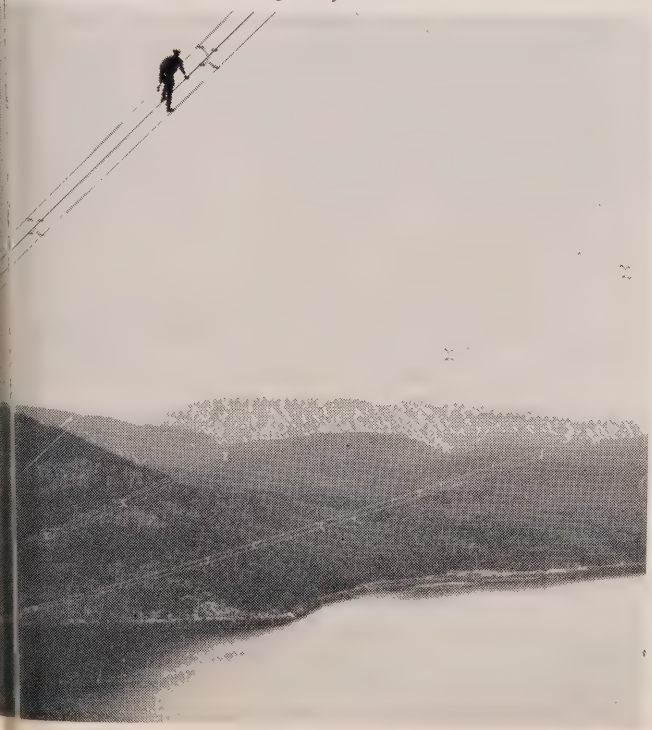
ng those who attended the inauguration of the new line, which re- ts an investment of $63,000,000, were Ontario Hydro Chairman W. trike and General Manager Dr. J. Mervyn Hambley.

Ontario's EHV line, the Quebec development has resulted in a host of new engineering, design and manufacturing techniques and innovations.

To bring power from new generating stations in the James Bay watershed to the Toronto area, Ontario Hydro's 500,000-volt EHV line has been operating at 230,000 volts since the first section was placed in service in 1963. It will operate at full voltage this year. □



*ulations were in order as the new line was inaugurated. Left re: Jean-Claude Lessard, Hydro Quebec chairman; Jean Lesage and W. Ross Strike, chairman of Ontario Hydro. , below, is 900 feet above Saguenay River.*



## municipal briefs

**Roy Pierson,** 81, chairman of Brantford Township Hydro and a commissioner for 34 years, died recently. A former post master at Cainsville, Mr. Pierson served on the OMEA board of directors at different times during the late 1940s and early '50s, as president of District 5. Mr. Pierson had been elected for another two year tenure on the Hydro commission a month before his death.

**Kenora ratepayers** recently voted to end the agreement by which the Ontario-Minnesota Pulp and Paper Company supplied the municipality with electric power and to buy their power from Ontario Hydro. The change will affect 5,058 Kenora and Keewatin customers. The town owns its own distribution system and no date has been set for the changeover.

**David McVie,** 30, has been appointed manager-secretary of Markham PUC. Formerly office manager of Mimico PUC, he succeeds Howard Graham, Markham Village Clerk-Treasurer, who also held the position of secretary-treasurer of the PUC. The Markham staff recently moved into a new electrically heated office and service centre. With its population of 6,700, Markham has one of the largest populations of any village in Ontario. Five years ago the population was only 4,000.

**Paris PUC** honored George Foulds recently on his retirement from the commission after 25 years of service. Mr. Foulds, chairman of the PUC for 16 years, did not run for re-election and his place on the commission will be taken by Foster Scott, a Paris high school teacher.

**Ivan Bradley,** Waterloo PUC manager, announced that of the 487 dwelling units for which building permits were issued in Waterloo in the first 10 months of 1965, 33.5 per cent will be electrically heated. In 1964, 12.5 per cent were heated electrically.

**Smooth Rock Falls** Chamber of Commerce sponsored a motorcade which traversed the new road between their town, located on Highway 11 between Cochrane and Kapuskasing, and the Ontario Hydro centre near Fraserdale. The 45 mile access road is being built by the Department of Highways with the capital cost borne by the Commission. From Fraserdale, the party of 26 cars travelled to Little Long for a tour of the site. This is the first road link between the Abitibi Canyon community and the rest of the province.

**R. H. J. Gray,** formerly supervising municipal accountant in Ontario Hydro's Central Region, has been appointed system's analyst in the Work Study Department of the Comptroller's Division.

**Pembroke** and the Pembroke Electric Light Company have agreed on a price for the company's distribution system in the event the town decides to take it over. Purchase of the system will be put to a vote as soon as the company receives a commitment from Quebec Hydro on the purchase of the company's Quebec assets. In a recent report, Deputy Reeve Donald Simpson said that if the holdings were taken over by Quebec, the town would buy its power from Ontario Hydro.

**Deep River Hydro** has been running paid public relations-type articles in the North Renfrew Times, the local newspaper. Topics so far have included lucid explanations in depth of the organization and responsibilities of the Hydro system; load building and how electricity is delivered to Deep River homes.

**Clarence "Sandy" Moors,** former Fort William Hydro commissioner and vice-president of the OMEA in 1956, died recently as the result of an automobile accident. Mr. Moors had served on the Hydro commission from 1944 to 1957. A. W. H. Taber, manager of Fort William Hydro, said of him: "Mr. Moors was extremely devoted to his office and had a keen awareness of his responsibility. He was one I could turn to for advice with complete confidence. The city has lost a devoted citizen."

**David Rolston** was presented with a pen-and-ink sketch of the new Strathroy PUC building as a going-away gift at a recent banquet tendered by the PUC and staff. Mr. Rolston is now manager of Goderich PUC.

**Harrow Hydro** reports that electrically heated homes have become the vogue in this community. Since 1963, every house which has been built

with the exception of two, have been all-electric. Six older homes are presently being converted to electric heat and six new ones under construction will be electric. Even the new school in Harrow is all-electric.

**Ottawa City Council** has given its blessing to a $600,000 underground wiring program. Plans call for Hydro wires on the uptown portions of Wellington, Rideau, Elgin, Laurier and Sussex streets to be buried this year. The Federal Government, which owns most of the abutting property, will pay $434,000; the city and Ottawa Hydro about $80,000 each.

**O. Hugh Feenstra,** Western Region municipal accountant, joins Stratford PUC this month as administration manager.

**Peterborough** Utilities Commission will supervise construction of the electrical service at Trent University. The service will provide for the power requirements of the all-electric university up to 1980, according to R. R. Firman, a consulting engineer. As reported in the Peterborough Examiner, he said: "In 1980, the electrical bill at the university will exceed $300,000.

**Of the 282 dwelling units** for which building permits were issued in Peterborough during 1965, 39 per cent were electrically heated, Howard Powell, Peterborough Utilities Commission manager announced. Of the 129 apartment suites completed, all were electrically heated.

**The first substation** built by Wallaceburg Hydro was recently dedicated to manager Douglas Stewart. Following dedication of the bungalow-type station, a reception and dinner were held.

**Guelph doubled its size,** January 1st, when the annexation of some 10,000 acres from the townships of Guelph and Puslinch became effective.

**William Bishop**, secretary-treasurer of the Guelph Board of Light and Heat and an employee for nearly half a century, retired at the end of the year. His duties since 1917 have included almost every facet of the accounting and administrative function. Mr. Bishop was general manager and secretary-treasurer from 1951 until 1960 when ill health forced him to relinquish the former position. Also retiring from the Board is R. E. Helmer, chairman of the commission, who has accepted a position with the Federal Department of Labor which involves considerable travel.

**G. C. Norsworthy,** Sarnia Hydro commissioner, was one of the 30 passengers injured in the Canadian National passenger train derailment in Rexdale recently.

**The 84th president** of the American Society of Mechanical Engineers, H. N. Muller, vice-president, Engineering, Canadian Westinghouse company, was honored at the January 27 meeting of the ASME. Niagara-Hamilton section, held at Burlington. C. A. Grinyer, vice-president, Engineering, Hawker-Siddeley Canada Limited, spoke on "Canadian Industry and Atomic Energy." □

## Niagara Falls in London

The hydro-electric concept of power development at Niagara Falls was launched in 1890 at an international commission meeting held in the Niagara Room of Browns Hotel in London, England. To commemorate this historic event, Premier John Robarts, on a recent visit to the United Kingdom, presented a painting of the Horseshoe Falls to John Tregoning, left, representing the owners of the hotel. The painting was executed by O. N. Grebze, a former staff artist with Ontario Hydro.

The inscription on a plaque in the Niagara Room reads: "The International Niagara Commission, composed of Lord Kelvin, chairman, England; Pr sor E. Mascart, France; Dr. Coleman Sellers, United States of America Col. Theo Turrettini, Switzerland; Professor W. Cawthorne Unwin, secre England; was organized in this room, June 21st, 1890, by the Cataract struction Company, Edward Dean Adams, president, 1890-1910.

"This commission publicly announced its opinion in favor of the ado of electrical methods as the chief means of distributing Niagara power inauguration of the alternating current power system at Niagara followed by its adoption throughout the world."



*To commemorate the birthplace of a billion dollar concept.*

## Editor to Publisher



Friends at both Ontario Hydro and the muni utilities are going to miss affable Boyd Gra editor of Hydro News from 1952 to 1962, w returning to his home town of Lindsay this m as publisher of the 108-year-old weekly n paper, The Watchman-Warder. Boyd is reall ing over an old family business. His great amalgamated the Watchman with the Ward the turn of the century.

Boyd worked on the Lindsay paper for five before joining the RCAF during World War II. After his discharg returned to the paper, then held editorial jobs in other parts of the pro including positions with the Sudbury Star and MacLean Hunter Publ Company. With Hydro for 19 years, Boyd was Hydro News editor, s assignments editor and publicity supervisor before leaving the Comm at the end of the year.

## Hydro Bursaries

During the 1964-65 academic year, Ontario Hydro presented bur amounting to $500 each to six of the 10 eligible universities in the ince. Those receiving the grants, were Carlton University, Ottaw Master University, Hamilton; Queen's University, Kingston; Royal M College, Kingston; University of Toronto; and the University of Wi Newly created universities will become eligible when the required courses are available to second year students.

## Colorful Industry

Midland's economy will receive a boost when, in mid-1967, RCA Victor a $25 million plant which is expected to produce 300,000 color TV p tubes a year. The new industry will employ about 500 persons. Al Canadian stations will not start color-casting until October, 1966, 1,500,000 Canadian homes are already a prime market as they ca receive color TV signals from the U.S.

In a recent Globe and Mail report, W. Neville Keefe, general mana the Georgian Bay Development Association, credited the provincial g ment's designated area incentive program as being mainly responsi Midland's industrialization. Three major industries have been attrac this community since August. Under the plan, manufacturers are give grants to defray plant construction costs in less-developed areas.

## November Energy Production

Primary energy provided by Ontario Hydro in November total 3.91 billion kilowatt-hours, an increase of 10.6 per cent over same month a year ago.

For the first 11 months of 1965, the total is 39.43 billion kilow hours, up 7.1 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand November was 3.84 billion kilowatt-hours, 2.5 per cent more t the previous month.

The seasonally adjusted total for November represents 4 billion kilowatt-hours at annual rates. This is 331.5 per cent of energy demand in 1949.

# off the wires

Most of us probably had a little trouble getting o high-gear after all the Christmas and New ar's merry-making but for awhile, at least, one or fellow in Toronto didn't make any progress all. In fact, he was going backwards according his electric clock.

Astounded to find the hands of his timepiece ving in an anti-clockwise direction shortly after dawn of the new year, A. L. Meredith fiddled, gled and thumped to no avail. He was swept xorably back into 1965.

The cure was simple enough, consisting of gging and unplugging the clock until it got k into step with its brethren all over the world. cause? That's something else again. It had to with peculiarities of certain clock motors, er cycles, magnetic fluxes and reversing ors.

Unnerving, to say the least, and not to be taken tly as the good citizens of Luleaa, Sweden, nd out recently. There, according to Electrical ld, everything started going backwards. Eleva- went down, not up, and up, not down; pro- ors in movie houses reversed and service sta- pumps began siphoning gas out of cars.

was just a phase, apparently, and everything back to normal in less than half an hour. The es had been reversed for 27 minutes to about thirds of the city of 30,000 inhabitants, about miles south of the Arctic Circle.

n, the exact nature of the cause escapes us t involved reversing the connections to a very rtant transformer during rebuilding. Half-an- of that sort of thing is quite enough for the Swedes and who can blame them if they up to take the pledge. Yumping Yiminy!

ving disposed of magnetic fluxes and mixed-up es, we can get on with more essential con- ations — such as sex.

ctricity, it seems, is interfering with the rs of our moths. According to scientists, insects get so frantic beating against lighted ws and lamp fixtures that they forget all , ahh, carrying on. As a result, the moth lation has dwindled from hundreds of zillions a few thousand billion. And each new house cottage that lights up provides additional ion, further depleting the ranks of our little l friends.

very sad, but we don't think it shou!d be d to affect the country's expansion. Surely de open spaces still available provide suffi- rysting places. Or they could wait until the go out like the rest of us. Come to think of gh, entomology must be an absorbing pro- . Fancy following a moth around to check norals.

time to time we are prone to expound the ity of electricity in these columns and a of new applications have come to our atten- ich seem worthy of mention. First, a note itain, where, not so long ago, they abolished punishment. They have announced an en- ew concept in electric chairs. This one, designed for the comfort of the elderly, incorporates a 60-watt heating pad in its back. Temperature can be controlled from an arm panel which includes an indicator lamp to show when all systems are "go."

■ And the usually reliable Windsor Star reports that another type of electric "chair" is gaining popularity as a status symbol. This one represents an important step in the evolution of the most prominant piece of furniture in our bathrooms. Costing $80 and up, installed, toilet seat heating, we are told, is warming the, well the hearts of at least two Windsor families.

■ Sleep is another theatre in which electricity is playing a role. In New York recently a man was sent off to the land of nod with a few pulses of low level current. His best friend, the dog, was anesthetized by a similar method in a companion demonstration.

In Japan, they have come out with a sleep-inducing pillow employing electric current. Made of foam rubber, it has a tiny electronic device inside which produces sounds resembling rain drops by means of a special neon tube.

Running on house current, it produces 70 sound pulses a minute which are claimed to be as monotonous and sleep-inducing as the voice of one's spouse. Like the voice, the raindrops continue long after the sandman descends.

And don't bet the Japanese can't make it sell. After all, you meet the nicest people in a dream.

■ Not to be outdone, the Russians are turning to electricity to learn while they sleep. English lessons are being played to a select group of students who are first lulled to somnolence by appropriate music. Instruction is repeated in the morning before waking. Simple grammatical rules and a basic vocabulary of about 1,000 words is the goal.

Just another instance of being born 40 years too soon. As we recall it, our classroom would have provided a perfect environment for these Soviet experiments — without the need for appropriate music. And to think, the Russians expect to learn 987 more words in a few weeks of sound snoozing than we added to our French vocabulary in half a dozen years of fitful dozing. Maybe its the horizontal position that makes the difference.

■ So much for the more enlightened electrical contributions to our way of life. But the news isn't all good. Overshadowing these developments is the ominous work being carried out by a pair of psychologists at the University of Ottawa who are developing an electronic technique for measuring human intelligence.

They claim to have discovered a connection between intelligence and the speed with which the brain responds to outside stimuli. The faster the response, the higher the subject's intelligence. Reflect, for a moment, on the portent. These men are at work on a device which will strip away all our carefully built up trappings of intelligence at the wink of a transistor and expose the true extent of our gray matter. Since the beginning of civilization the dolts, slobs and dullards among us have been able to assume some vestige of respectability by adopting a variety of techniques and facades.




*In December Hydro News we predicted that by 1984 we would probably celebrate Christmas by sitting around a gilded branch singing carols to a go-go beat. Well, Port Colborne Hydro beat us to it. Their float in the town's Christmas parade featured five swingers from Dunnville on a Hydro "rocket" truck. Theme of the attention-getting entry — go-go with Hydro.*

What use now the pipe-tamping and thoughtful expression in lieu of clever repartee? Silence, once a good pose for acuity, now stands only for vacuity. Forget that scant but select professional vocabulary built up so laboriously for dropping at propitious moments in conversations with the experts. Throw away the horn-rimmed glasses and put the beard to the razor. The masquerade is over. Being a dumb cluck is no longer a matter of opinion.

They still don't know for sure whether the test measures a particular aspect of intelligence or general, over-all intelligence, but they suspect it's the latter.

This, of course, shuts off the last escape hatch. No use shrugging off a poor showing on the brain meter with a comment such as "Oh well, that's just my creative side, I'm really a mechanical genius". Condemned by the machine — you're just plain stupid.

One glimmer of hope remains. The scientists are still two years and $150,000 away from completing the project.



# ontario hydro news

## february / 1966

- it's june in january for the hursons
- the radials almost made it
- electricity narrows the gap

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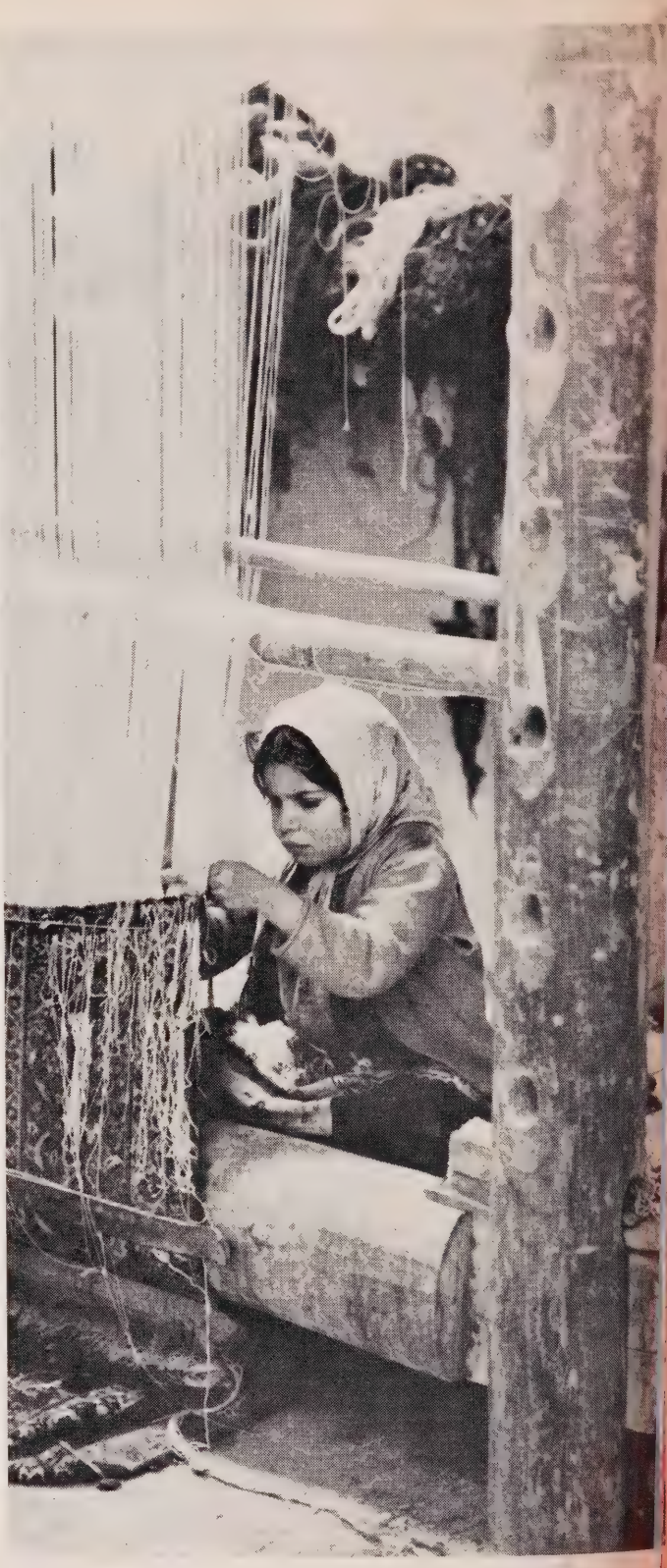
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**Could electricity help?** Next time the family cat uses your Persian rug a scratching post, think of this little girl.

Five children will work eight hours a day for three years to produc carpet four yards square. Even at the price of labor in Iran, its not worth adult's time and the work is usually carried out by girls from five to tw years of age.

In regions where electric energy resources remain undeveloped, majority of people live at a subsistence level. A glance at the various graphic areas will confirm the relationship between living standards electrical consumption. But things are changing.

For more evidence that electricity does make a world of difference, pl turn to page six.

# COLORFUL DAYS OF THE

*This is thought to be the first car operated on the Galt-Preston line — 1894.*



PHOTO COURTESY A. T. HILTON, PRESTON.

# RADIALS

story begins on next page



*Parasols and straw hats were the style in 1912 when these passengers disembarked at the Toronto-York Radial terminal south of St. Clair Avenue. The line ran as far north as Sutton on Lake Simcoe.*

**in the heyday of the inter-urban railways, one could travel better electrically from st. catharines to points as distant as indiana**

Straw boaters and panamas were stylish at Woodbine that year. The latest in three-button men's suits were advertised by Eaton's for track-opening day at $16.50. Charming as the ladies looked in their ankle-length skirts with high-button blouses and bows, it was preposterous, sir, to suggest they be given the vote.

Evidenced by its fast-growing Hydro system, industrialization was the coming thing for Ontario. There was plenty of work available and skilled tradesmen earned "as much as 25 cents an hour" on such construction projects as Toronto's Union Station.

It was 1912 and the latest tunes atop the player piano roll list included "In the Evening by the Moonlight," "When Irish Eyes are Smiling," and "Old Girl of Mine" — placid melodies which generally reflected placid times, but the year was not without its tragedies and controversies. The sinking of the Titanic and subsequent inquiry dominated 1912's newspaper headlines, as did the U.S. threat — ultimately acted upon — to send the Marines into Cuba.

Locally, the Methodist-sponsored "Ban the Bar Room" movement was gaining mo tum. And familiar-sounding more than century later, citizens and officials were u extension of inter-urban rail service.

While many of these railways had been ating in parts of Ontario since the early proponents of the extended network envi it as a Hydro service radiating 900 miles Toronto and connecting all surrounding cipalities. Electricity would supply the n power. The "radials", as the systems known, were seen as not only essent arresting the developing drift of workers the farm to the city, but the key to rapi tribution of goods and produce.

The concept was advanced at the a meeting of the Ontario Municipal E Association, in 1912, when Ontario Hydr called upon to investigate the possibilit establishing such a rail network, which - the province's newly-established electric tem — would be operated on a service- basis.

Adam Beck, Hydro's first chairman, w of the strongest advocates of the electric



COURTESY GEORGE COOK, PRESTON





COURTESY WILLIAM BAILEY, OAKVILLE

*Top photo shows Adam Beck about to board "First car using Hydro power from Niagara Falls" — as the poster reads. It belonged to the Preston and Berlin Railway and the date was 1907. Interior view is of radial car built about 1901. Proud group around cowcatcher rode first radial into Jackson's Point, Lake Simcoe.*

ransit system. He had seen similar net- perating in densely populated areas of and the United States.

rio's expanding population already ed more than 2,500,000 and with al- 2,000 motor vehicles registered in vince he anticipated costly highway nent programs ahead.

even greater foresight, Sir Adam be- at the St. Lawrence River would even- deepened into a Seaway and Toronto ecome an Atlantic port. Rapid inter- il service would become even more i for moving both people and com-

urban electrics had already been oper- ngside roads, such as they were, in parts of the province for some 15 he greatest number were in the area Toronto and Windsor. At one time it ble to board a car in St. Catharines ransferring from one urban system r, travel as far west as Milwaukee to Louisville. At the height of this ent in the 1920s, 18 lines with a total of about 500 miles of track operated in southern Ontario.

The electrical utilities plan was to acquire or improve existing lines, construct new ones and connecting links, and gradually develop the proposed province-wide network.

Two steps from the stagecoach era, Ontario's earliest electric railways succeeded horse-drawn trams and often inherited the tracks along which they ran.

Capable of travelling at 50 miles an hour, the early radials had an enviable safety record. Typically, the 24-passenger wood-and-steel cars operated on single track lines, with sidings about every quarter of a mile. Blaring horns warned unwary man, beast or vehicle to keep clear, and served as a means of communication in determining which of two approaching cars would pull into a siding to allow the other to pass.

Sometimes they travelled with as many as five cars but more usually they ran singly or coupled in pairs. Elaborately appointed, the interiors featured ornate lighting fixtures, plush upholstery and rich, inlaid mahogany. Some of the American cars even provided sleeping accommodation.

Powerful electric lamps mounted on the cars lit up the tracks far ahead and swept adjacent roadsides. Outside built-up areas the tracks forsook the side of the road for the middle, creating not only traffic problems but something of an eyesore.

As well as passengers, Toronto's Metropolitan line — ultimately the Toronto-York Radial which ran north to Lake Simcoe — carried considerable freight including ice cut from the lake and destined for city ice boxes. When residents along its Yonge Street route




COURTESY WILLIAM BOLTE

*With arms akimbo and mustaches at the droop, crews of the Toronto-Suburban Railway oblige the cameraman. Company operated between Toronto and Guelph with several street lines in the Keele, Weston Road area.*

complained at the sight of the "squat and ugly" freight cars, the cars were fitted with artificial windows and painted the same color as passenger coaches.

Some of the early radial lines, including the Toronto & Mimico which ran along the shore of Lake Ontario from Sunnyside to Port Credit, featured double-deck open cars in which gentlemen resplendent in blazers and straw skimmers escorted gaily-bedecked ladies on Sunday excursions into the countryside. With fares averaging two cents a mile and the ladies packing lunches these outings must have been among the entertainment bargains of all-time.

Highly successful in the combined business of carrying freight and passengers were radials operating in Waterloo County and between London and Port Stanley.

Operating on steam from its beginning in 1856, the L.&P.S., which, incidentally, was acquired last month by Canadian National Railways, was built to circumvent what were considered excessive freight rates charged by regular railways for shipping goods from Montreal to London. With the opening of the line, London businessmen had merchandise brought in through the Lake Ontario port. Excursions to the Lake Erie resort were also popular with the "in" crowd and special occasions such as the Irishmen's Picnic were memorable events.

Converted to electricity in 1915 the line made a tidy profit until the early 1930s and was pointed to by inter-urban railway advocates as "the model Hydro radial." This despite an embarrassing mechanical breakdown which marred the picnic celebrations marking the line's first run powered by electricity.

Adam Beck and Hydro's then-chief engineer F. A. Gaby were among the gay celebrants who doffed jackets and labored in shirtsleeves in a vain attempt to remedy the trouble. The ultimate humiliation saw the reluctant radial shunted back to London by a steam locomotive — symbolic, perhaps, of what lay ah the inter-urban electrics throughout t vince.

Passenger service on the L.&P.S., e 1957 when the cost of frequency co was deemed prohibitive. Freight was co with diesel equipment.

Within six months of the OMEA me 1912, 11 municipalities had asked Hy advice concerning construction of an railway from Toronto to Markham. interest was heightened in 1914 whe marchers descended on the House c mons in Ottawa to demand financial Hydro radials. The following year, 1, sons appeared at Queen's Park to ask tario government to provide a line- subsidy.

Twenty-three of 26 municipalities i Toronto had voted heavily in favor o and another 230 municipalities inte scrapping the horse-and-buggy as the means of suburban and inter-urban were seeking information from Hy gineers.









PHOTOS COURTESY WILLIAM BAILEY

*London and Port Stanley electric crosses a trestle. Front view is of a Niagara St. Catharines and Toronto Railway car — one of the last passenger electric inter-urbans to operate in Canada. Double decker of the Toronto and Mimico Railway was photographed about 1891. Ultimate development in electric locomatives is represented by this one of the Lake Erie and Northern.*

ouraged by such support, Beck and his ers pressed for an immediate start on a mile provincial system, to cost an esti- $92,000,000. But World War I was still and claiming that such expenditure t be justified at the time, the government the program by passing legislation pro- any action on radials until the end of ies.

owing the Armistice another radial pro- as presented involving lines from To- onnecting Bowmanville, Hamilton, St. nes, Guelph, Kitchener and Niagara. romised that this "initial stage" would wed by province-wide extensions.

he age of the automobile had arrived. ernment had embarked on an extensive development program and feared that urage radials would be to encourage tion to highways.

ded the question to a Royal Commis- ch after sitting 112 days issued a report ng the proposed radial scheme as un- l economically unsound. Commented nto Globe of the day: "The cost of the inquiry, amounting to the staggering sum of $496,754, is the price paid by the taxpayers of Ontario for the government's evasion of its responsibility."

The last hope for the radial network depended now on whether Toronto would grant Hydro a six-track right-of-way along the city's waterfront. The question was settled by ballot on New Year's Day, 1922. The proposal was turned down by 5,000 votes but the issue had raised emotions to a fever pitch. Typical of press treatment was this three-deck headline in the Toronto Telegram of November 2, 1921: "Pharisees of Queen's Park Crucified Hydro Radials . . . . Big Interests on Top . . . . Mothers and Babies Cheated of Hope . . . . Outrage on Humanity. The opposition press was no less restrained.

Defeat was complete when the government followed up by cancelling existing financial agreements between Hydro and the municipalities, making it clear that those interested in radials from then on were strictly on their own.

Time had run out for the radials — at least for that particular period of Ontario's history. In the years that followed, many municipalities that had invested in them suffered heavy losses.

Lines were gradually abandoned and torn up. Some were taken over by the major railways and converted to steam or diesel operation. Others were, ironically, covered with asphalt to accommodate motor vehicles which today constitute one of the province's greatest transportation problems. Authorities are taking a new look at commuter and inter-urban transportation and electricity is to the fore in much of their thinking. Some of the latest plans and developments will be considered in the March issue of Hydro News. □

# a world of difference

by LOIS LANE

EMERGING NATIONS EVERYWHERE WILL ENDORSE THE NATIONAL ELECTRICAL WEEK THEME — "ELECTRICITY MAKES A WORLD OF DIFFEREN



In a civilization where two-thirds of the people live in technically underdeveloped regions, the availability of electricity certainly does make a world of difference. This may be the age of the supersonic jet, the instamatic electronic oven, and the mauve-tiled bathroom with fixtures to match — but only for a few.

For the majority of the earth's inhabitants this is still the era of travel on foot or on the back of some beast of burden; cooking the only meal of the day over a wood, charcoal or dried dung fire; the age of non-existent plumbing.

In regions where electric energy resources remain undeveloped, society, in most instances, is still dependent on agriculture. Without electricity's aid, the majority of people live at a subsistence level.

As E. W. Golding of the Electrical Research Association of England points out: "there can be little doubt that underdevelopment and a low degree of energy utilization for industry and for agriculture go hand-in-hand." In other words, the amount of energy used, per capita, gives a fairly accurate picture of the stage of development reached by different countries.

"Low energy consumptions and low incomes correspond to a remarkable degree," observes Mr. Golding. "Although it might well be argued that prosperous people buy more energy to improve their living conditions, it is more likely that increased energy consumption is the cause of prosperity rather than the effect. It is never the only cause as peaceful conditions, wise government and well-directed hard work are obviously important ingredients in the formula for the achievement of living standards."

A glance at the various geographical areas confirms the relationship between economic standards and electrical consumption. Every man, woman and child in North America uses an average of 5,200 kilowatt-hours of energy a year, compared with 1,923 kilowatt-hours in Western Europe, 373 in South America, 149 in the Middle East and only 55 in South East Asia, excluding Japan. Incomes tend to follow the same sliding scale. The people of Ont for instance, have an income per capit more than $2,200 while the inhabitant Thailand average less than $100.

This gap must be narrowed and, not prisingly, a high percentage of the foreig funds allocated for this purpose by the affluent countries of the world are ear-ma for electrical power developments. Again assumes that the availability of elec energy leads to the establishment of ind and improved agricultural output.

The United Nations has been one o main bulwarks in encouraging both n emerging and established nations to step the materialistic 20th century. An affiliat International Bank for Reconstruction Development (World Bank) was establish 1946 to make funds available for these poses. Since its beginning, millions of d in loans have been granted to 64 me nations — electric power development transportation facilities being the leadin cipients of this assistance.

One of the areas where this capital c seen at work is Africa. The huge Volta project in Ghana is being financed b United States and British governments, a a $47 million loan from the World Bank

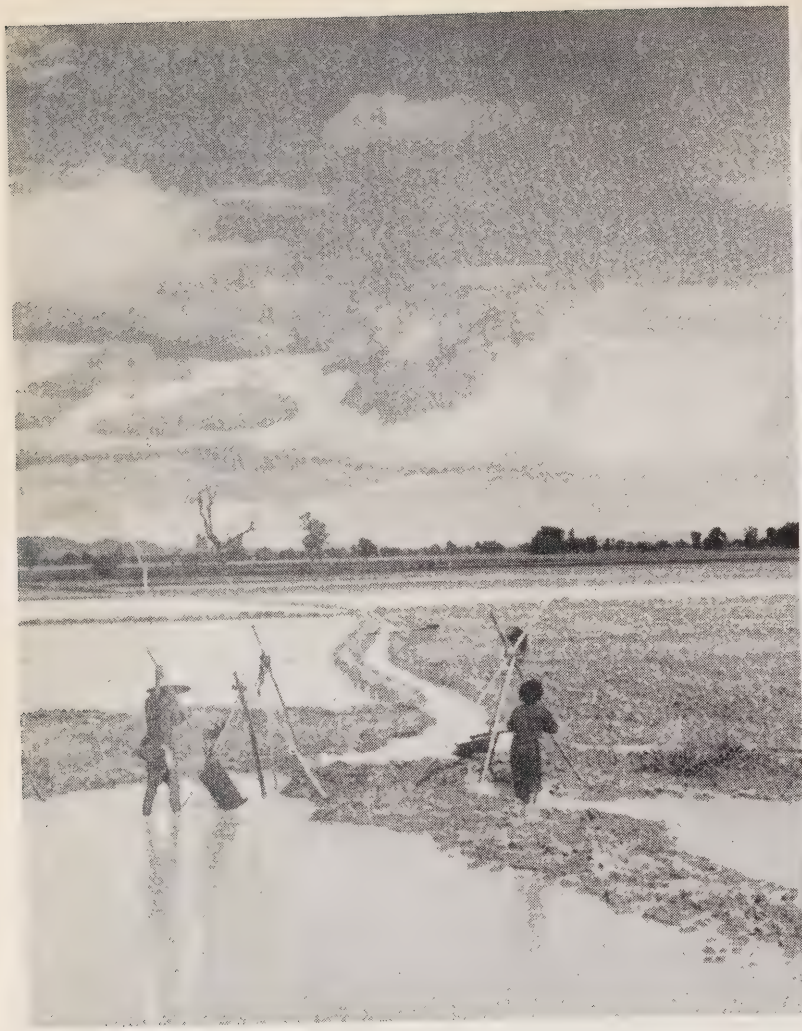
Already in partial operation, the huge and power plant at Akosombo will even produce 900,000 kilowatts. Its chief cust initially will be a newly-constructed alum smelter — an industry based on an abu supply of bauxite and electricity. Pow being transmitted to Accra, the capital and a ring of transmission lines 400 mi circumference supplies towns, villages mines in Southern Ghana.

In the Middle East, both Iran and the U Arab Republic are banking on electric to spark far reaching economic develop

Hundreds of years before Christ the K tan area of Iran was a lattice-work of irri ditches and the breadbasket of the P Empire. Today the area is almost a

*Our whole theme is reflected in this view of the old and the new in Pakistan. Bulldozers are preparing site for huge dam at foot of historic fort near Mangla. Lady at left was photographed by a Hydro expert working on the Volta River project in Ghana.*







land, with its inhabitants barely eking out a living. Until recently, Iran's national output of goods and services was only a little over $200 per person.

But new hope has been raised by the construction of the 600-foot-high Dez dam. An associated irrigation project supplies 50,000 acres and involves 53 villages and some 12,000 people. The program is designed to demonstrate better farming methods and will eventually affect some 225,000 acres. Some of the original irrigation ditches are being utilized.

It is interesting to note that Ontario Hydro personnel are playing key roles in the construction and operation of the Volta River and Dez Dam projects. Other Hydro experts have returned recently from Pakistan, Brazil and Nigeria.

In Egypt, the Aswan High Dam scheme, commenced in 1960, is expected to be finished in 1969 and could well change the entire character of the United Arab Republic's economy. The project, which includes the construction of a 2,100,000-kilowatt power plant, will regulate the flow of the Nile for the first time in history and provide irrigation on a year-round basis.

Flood control will be provided and navigation on the river will be improved. In the latter stages of the scheme, industrial development around Aswan will include expansion of an existing fertilizer plant. Low-cost power is expected to make an iron and steel works feasible to exploit local deposits of ore. The project, to cost approximately $960 million, is being undertaken by the UAR with massive assistance from Russia.

Shifting to the Latin American scene, 125 World Bank loans have been granted to 19 countries for a total of $1,739 million. Again, much of this capital has been invested in the development of electrical resources. High in the Andes, in both Peru and Colombia, world bank loans are at work harnessing mountain torrents to provide power for economic expansion.

One billion dollars is the price-tag set on a mammoth water shuffling program involving Pakistan and India — a program of such proportions as to stimulate the entire economic climate of the area if the two parties can overcome their differences and co-operate.

Both countries have signed a water treaty, after eight years of negotiation by World Bank officials, involving use of the Indus River system.

The water India takes under the agreement would be replaced by a gigantic water transfer project, by far the largest in history. Two huge storage dams and a series of canals would provide water to irrigation systems now fed by rivers under Indian control. The canals would have an aggregate length of 388 miles and irrigate up to five million acres of land.

Other facilities provided by the trea
clude a huge power plant, presently unde
struction in the Rudyard Kipling coun
the Himalayan foothills, which will ha
initial output of 300,000 kilowatts. Pa
eventually hopes to develop its full po
of one million kilowatts.

Also in Asia, the government of Th
has embarked on a number of far-re
projects to raise the standard of living
29.7 million people whose present annu
put per capita is $106. Among them
Yanhee multipurpose project which inc
500-foot-high dam to harness water fr
Chao Phya River tributaries. Capacity
station will be approximately 500,00
watts.

What was to have been one of th
examples of international good will a
operation is, ironically, hanging by a
due to the war in Viet Nam. Approx
20 million citizens of Laos, Cambodia
land and Viet Nam live in the delta
mighty Mekong River and their li
dominated by the monsoon cycle of fl
drought.

One of the world's greatest riv
Mekong drains an area of 306,870 squa
and has been little controlled by man.
the four countries signed an agreem







Economic Commission for Asia and East for possible development of the far, 21 nations have contributed a $67 million, two-thirds of it going for nd surveys.

ian aerial teams have surveyed the Canada and the United States have topographical maps. Canadian and teams have co-operated to establish t suitable for power dams and irriga- ects. Australians have done prelimin- gical studies.

United Nations World Meteorological tion has measured precipitation and ows in the area while British and New teams have studied navigation im- nts on the river. Japanese, U.S., nd Israeli engineers have made studies le dam sites, while the French have data on fisheries and silting effects. s are planning the irrigation systems. ition to skills and manpower, materials donated. Both Nationalist China and ve sent cement while Iran has con- oil and gasoline for this mammoth ing.

sing of agricultural and forest pro- expected to follow the Mekong ent scheme but even without major ization the demand for electric power crease five to seven fold in this region — a region with a river capable of generating millions of kilowatts — someday.

"An interesting parallel can be drawn between these rising nations poised on the brink of an economic take-off and our own province," says L. T. Higgins, Ontario Hydro economist. "Ontario was at this stage of development between 1896 and 1914. During this era our population expanded and we too had access to capital for investment in hydro-electric development. Like many of these nations, our water resources were more than adequate for the needs of our people and industry in the initial stages. World War I stimulated power and industrial development and led to a self sustained growth in living standards which is still in progress. About 1950, the Canadian economy appears to have reached a mature stage which has come to be known as the stage of high mass consumption.

"But in helping underdeveloped nations of the world to emerge, we should remember that economic and social progress are closely related. It takes almost a generation even to establish an educational system capable of combatting mass illiteracy. All the expensive transportation systems, power developments and agricultural equipment will be wasted on a people without the necessary skills and a mental attitude oriented toward economic progress." □

*Above: dwellings like these housed 1,200 workers during Sefid Roud power and irrigation project in Iran. Manpower makes up for primitive methods in this view of the Aswan High Dam site on the Egyptian Nile. Section of huge Volta River development is also shown.*

*Opposite page: irrigation projects and power developments are bringing new hope to the 29.7 million people of Thailand whose per capita annual output is worth about $106. Photo shows rice irrigation near Bangkok. In many parts of Pakistan drinking water is the costliest commodity, as the photograph suggests.*

# atoms and onions

atomic stew may be in the offing as scientists turn their attention from irradiated onions and potatoes to meat and poultry

by JOHN DAVIES



*Effects of varying doses of radiation on potato sprouting are shown. All had been stored for 5½ months at same temperature. World's first mobile irradiator, far right, was built by AECL to visit warehouses and processing plants.*

progress continues in the vital drive to
e cheap electric power from the atom,
applications of nuclear energy have not
eglected. Keeping the world well fed and
are the kinds of problems our nuclear
ts are helping to overcome in their
to derive maximum peacetime benefits
ne atom.

he many fields being investigated, none
e promising than the preservation of
y irradiation. And in this area, fact is
ng speculation. The shelf life of various
s being greatly extended.

e Canadians have been eating irradiated
s since 1961 when Atomic Energy of
a Limited (the Federal Government
for producing and distributing radio-
s) rolled a mobile unit into action.
ing harvests in Ontario, Quebec and
aritimes in the last few years, AECL
ablished the feasibility of using Cobalt
diation to inhibit sprouting in some fruit
etables.

ntion was first focussed on the potato
of conditions peculiar to this aspect of
an agriculture. Each year, upwards of
lion tons of potatoes are consumed in
and about 80,000 to 100,000 tons of
re American imports. This is despite
t that Canadian potato farmers grow
an enough to supply the home market.
uting is the problem. The tubers can
stored for 8 to 14 weeks after harvest-
keep them longer they must be stored
pecial conditions at temperatures be-
8° F and 40° F. Variations either way
hem unsaleable.

ate, losses of potatoes stored for future
have been fairly heavy and in the case
oes used for chips, they have not been
orily stored at all. This gap in the
n market is being plugged by prolong-
storage life of home-grown potatoes.

After irradiation, potatoes can be successfully stored at temperatures up to 70° F and still retain their marketability. Potatoes treated in this way have retained their firmness from 15 to 18 months with taste and other desirable qualities unimpaired.

The irradiator designed and built by the Commercial Products Division of AECL consists essentially of a radioactive source, shielding, conveying and control systems. At present the radio-active sources are produced in the atomic reactors at Chalk River, Ontario. The sale of this material and associated equipment and services represents an important part of Canada's export industry in the nuclear field.

By developing the irradiation process to inhibit sprouting, AECL has pointed the way to commercial enterprise. The world's first commercial food irradiation facility is now in operation at Mont St. Hilaire, Quebec. A $1,200,000 development by a recently formed Canadian Company, it irradiates and stores potatoes for Canadian farmers. With storage capacity for 15,000,000 pounds, it will help Canadian potatoes compete with the U.S. product during the off-season.

Onion growers have suffered similar difficulties of marketing because of loss of weight and quality in storage and they too have high hopes for the irradiation process.

At one time Canada was the only country where health authorities had approved the public sale of irradiated potatoes. Today, proposals to irradiate such foods as poultry, meats and fruits are also under study by the Federal Department of National Health and Welfare. South of the border, the U.S. Department of Health, Education and Welfare has ruled that bacon, potatoes, wheat and wheat products preserved by radiation are safe and fit for public consumption.

The first U.S.-Canadian research program on radiation preservation of food got underway last summer when scientists from the two countries began a two-year study on extending the shelf life of chicken by low-dose radiation pasteurization.

In announcing the joint program, AECL, the Canadian participant, pointed out that the refrigerated shelf life of freshly killed chickens is from seven to 10 days under present marketing conditions. Radiation pasteurization is expected to double this shelf life and result in more stable marketing operations and in wider marketing areas for breeders, processors, shippers and sellers.

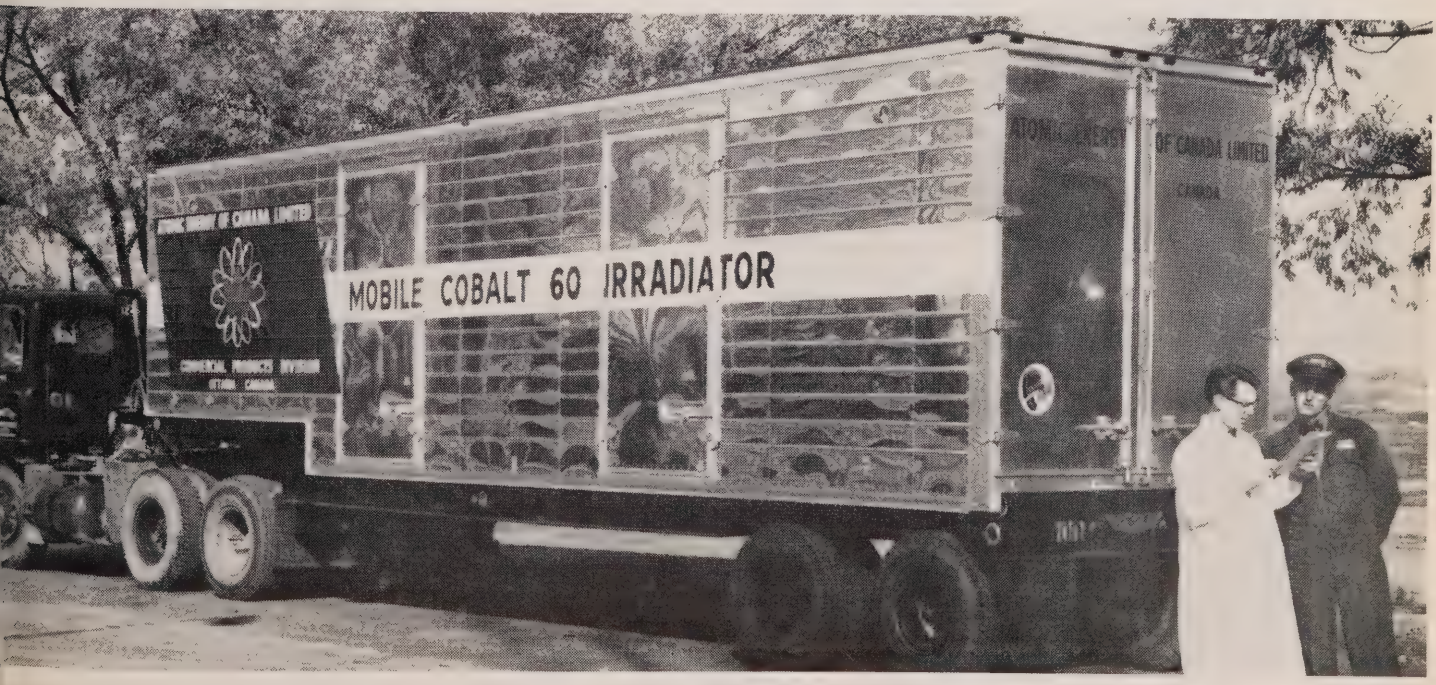
But food is just one of the new directions in which our scientists are aiming their irradiators. Only a year ago the first commercial irradiation plant in Canada to sterilize surgical sutures began operation near Peterborough. The sutures, with needles attached, are exposed to a Cobalt 60 source after packaging and arrive at the operating theatre guaranteed sterile.

The medical field was, of course, among the first to benefit from nuclear technology and Canada was in the forefront of these developments. It was only fifteen years ago that the first Cobalt-60 therapy unit was made available to a London, Ontario, hospital for the treatment of cancer — confirming the expected advantages of this type of therapy over conventional x-rays.

Since then, cobalt-60 beam therapy has become part of the standard equipment of the radiation therapist everywhere in the world.

Potential areas in which nuclear science can contribute to our general welfare stagger the imagination. New applications of radioisotopes ranging from wood impregnation to crime detection are being explored.

And so, as the nuclear-electric power drama unfolds, it will continue to share the stage with other nuclear developments of a very wide scope and significance. □



# summer cottaging in winter

by NICK NICKELS

Each Saturday morning during the cold months — and on Friday evenings the rest of the year — Sue and Bill Hurson of St. Catharines pull up to the door of their winterized summer cottage at Juniper Point in Peterborough County's Kawartha Lakes region. From St. Kitts to the cottage is a three-hour drive.

Sometimes their Toronto neighbors across the bay, the Rummlers, and the Pomantis around the point, beat the Hursons to it. Arriving first at the cottage colony has become a friendly competition as has the speed with which they settle in to the wonderful quiet and constantly changing character of the lake setting in winter.

I know what it's all about because I joined them on one occasion recently.

First, the Hursons flip a switch activating the electric baseboard heaters. A supplementary space heater helps speed up the process. Next follows the fireplace lighting ceremony. Bill then chops out the frozen watehole in the bay ice — he disconnects the intake water line and water pump late each fall. Sue starts lunch on the electric range. The kettle hums, the percolator perks and by the time the meal is ready the cottage has warmed up enough to permit the peeling off of sweaters.

What to do after lunch?

If the weather is poor, they watch television, read or just doze. But if the afternoon is fine, they pile the dishes in the sink, uncover the snow cruiser parked on the verandah, crank it up and roar across the bay to visit the neighbors.

They find Paul Rummler puttering as usual on the skeleton of his 20-foot, centre board sailboat wedged kitty-corner in the living room; it's the second and final winter of its building and it will be launched this spring. Guest Ralph Plutowsky kibitzes while his wife Marianne, helps hostess Helen Rummler serve up beer and cold cuts all around. They eat standing at the deck of the unfinished boat and squeezed into crowded corners. It's a fun meal, if a bit noisy.

Afterwards they bundle up and go snow cruising on the lake below. From behind a tall screen of jack-pines you can hear their exuberant shouts as they trace giant figure eights in the snow. It takes three trips for them all to congregate at the Pomanti cottage.

Owner Joe and his young friend, Pietro Albanese, are batching it this weekend. They have felled a tree and are cutting it up for the fireplace. Early that morning they shot and skinned out two rabbits. Everybody is a chef as the girls prepare the fresh-killed meat for the stew pot. All agree to play cards at the Hursons in the evening.

And so goes the wonderful ritual of winter cottaging for a growing horde in the cold regions of the Kawartha Lakes, Parry Sound, Lake Simcoe, Muskoka, Lake of Bays, the Crowe River watershed and the Rideau System, in south-central Ontario.

There are an estimated 100,000 electrified summer cottages in this vast lakeland playground. E. L. McCarey, manager of Ontario Hydro's Minden office, says 25 per cent of the 5,000 owners in his area use their cottages for winter weekend living. He thinks the trend is here to stay and will likely grow across the province.

New Canadians probably set the pace for year 'round enjoyment of summer hide-aways. They had so much fun that their native-born summer neighbors became suspicious. Finding out what they had been missing, they joined in the life with gusto. And why not?

Most cottage colonies are as accessible in winter as they are in summer. Main highways and township roads are kept open and where the road ends the motorized sled (snowmobile) takes over. Providing the missing link between car and cottage, these popular vehicles assume the role of a boat for island dwellers when ice conditions are safe.

Once at the cottage, electricity takes over, making winter sojourns at the lake as attractive to mother and the kids as they are to their he-men. Everything from heating to hair drying is at their finger tips.

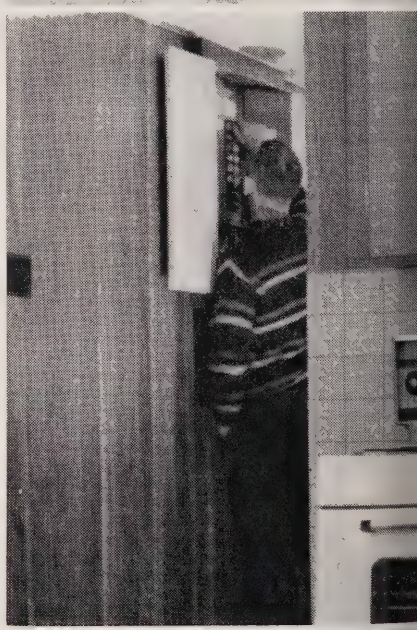
"A two-month total cottage use is for the birds, or the well-to-do," observe the Hursons. Bill figures their investment this way:

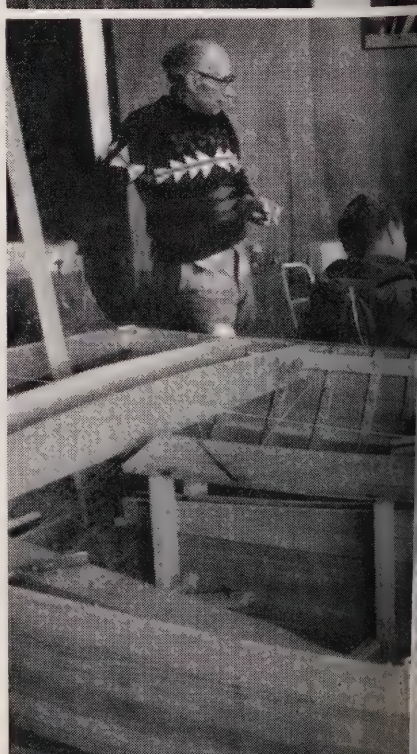
Their uninsulated, three-bedroom cottage and lot cost them $6,500 in 1963. They paid $1,000 down and are working on the five-year balance that bears a five per cent carrying charge. Insulation of the bare cottage, including the floors, plus the appliances and furnishings, cost them an additional $1,200. Their total rural Hydro bill for 12 months comes to about $70.

"I pay another $25 a year for stove oil on top of my Hydro bill," chimed in Paul Rummler," but I'm changing over my heating system to electricity as soon as my sailboat is finished."

Both men agree that from an investment







*Sue and Bill Hurson of St. Catharines are among the thousands taking to their summer cottages all year 'round. Electricity takes the work and discomfort out of "roughing it" while the snowmobile provides recreation and transportation.*











point of view, winter cottaging makes sense.

Total use is the cardinal point presented by real estate brokers dealing in resort properties.

"Fifty per cent of our buyers take advantage of the insulation idea for year-round living," says Terry Hill, summer properties sales manager for Bowes & Cocks Limited, Peterborough. He claims his firm helped set the trend to winter cottaging in the area and was the first to make extensive use of the snowmobile for the winter-time selling of properties.

Taking reluctant leave of my new-found Juniper Point friends, I could not help comparing the new way of life with the two-month summer cottaging cycle I had known for many years in the Kawarthas.

Cottaging time in the good old days started when school was out at the end of June. We arrived by train and steamboat with the summer's provender and bedding piled in the freight hold. It took 11 hours for the 23-mile trip from Peterborough. Life was dominated by a black monster of a woodstove and its enslaving woodpile while spare moments were spent polishing smokey chimneys of coal oil lamps and lanterns. Mail arrived in our shut-off world at the summer post office and we found our social life in regattas, shore picnics and huge bonfires, for there was plenty of vacant shoreline.

Reminiscing as I drove, I recalled how it took two weeks to properly open the cottage and another two weeks to batten it down before school again ended the so-called holiday; it was actually hard work in a different atmosphere. And a real devil of a fellow was the sporting uncle who opened the kitchen section of the cottage to a couple of friends for a fall weekend of duck shooting. . . .

I turned into the crossroads store for gas, weaving a pattern between six parked cars. Their owners were inside buying groceries, live bait for ice fishing, small hardware, magazines. The three women clerks waiting on them looked harassed. The store owner served me.

"Whew! Are we ever tired. Been rushed off our feet this weekend, every weekend, it seems." He shoved the nozzle of the gas hose into the tank and wiped his moist forehead with a paper towel. He seemed to half regret the booming business.

"Winter cottaging is here to stay. It has sure changed life in these parts. We used to close shop from the end of the deer hunt until Victoria Day week-end. That'll be $4.50, please. Change a twenty? Sure."

He pulled a roll out of his pocket that would choke an ox, then trotted around to another car that had just pulled up.

"Fill 'er up, please," seemed to symbolize the new approach to winter weekend leisure and its impact on the people who once put their feet up on the woodbox before the snow began to fly and kept them there until late spring. □

## hydro makes tracks

Call them snomobiles, power toboggans or motorized sleds — whatever the name these 20th century versions of the dog team are proving a mighty important tool in a va pursuits from winter cottaging and tra ice fishing and moose hunting. Hydro finding them useful.

With more than a dozen among its the Commission has been using this transportation for 15 years and keeps the latest developments. The machi proving especially valuable in surveyi

They are great time savers because, ject surveyor Frank Deconkey puts it, you're walking you're not surveying an times the only alternative to the two-ma mobiles is a two or three mile walk, o snowshoes". With trailers they can w to four men and equipment to and fr job at speeds up to 20 miles an hour.

"How else can you ride through op or along logging trails without bogging Frank asks. "When you do get hung up trick to heave your machine out of the horse it around windfalls. Of course, w usually operate them under windfall tions but sometimes there isn't any cho

However, the locomotives of Hydr the-road transportation fleet, both sumr winter, are the muskeg tractors. Cap moving several tons, these wheelless v do the heavy work on line constructi other Hydro projects. About 100 of the tors of various sorts and descriptions the Hydro books.

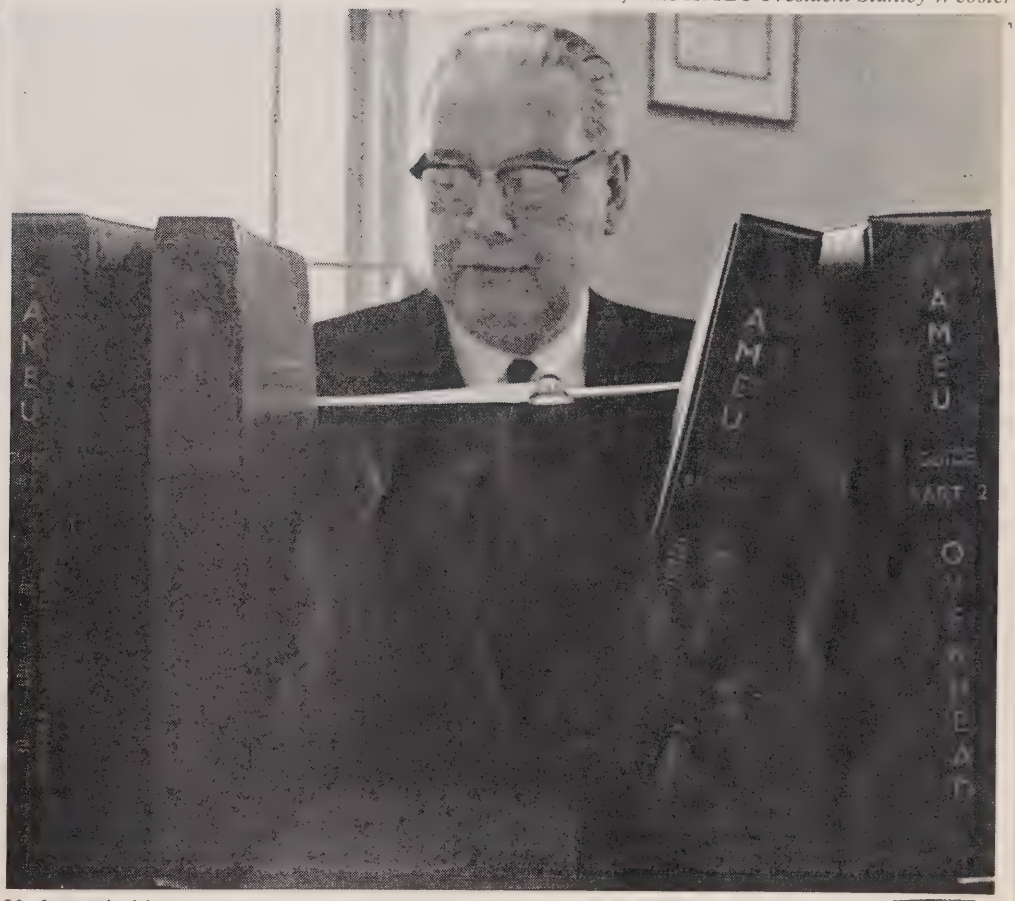
But they do need some kind of cleare of-way and even husky Hydro workers have trouble hoisting them over a win



*Survey crew at Mountain Chute sets out for the work site with mechanical "dog*

**guides to efficiency** /outsold by james bond and mickey spillane, the ameu guide books are still preferred reading by power system engineers and administrators around the world

*Guide books frame AMEU President Stanley Webster*




If the switchboard operator at Fort William Hydro answers your query in much the same considerate and helpful manner as her sister in the billing section at Kingston PUC, don't be surprised. Similar uniformity probably exists between the new underground systems in Barrie and London. And the same holds true for a wide list of procedures ranging from letter writing to substation design employed by municipal electrical utilities across the province. How come?

In all probability, the Association of Municipal Electrical Utilities (of Ontario) is chiefly responsible. Tracing its origins back to the Niagara Electric Power Union, formed just after the turn of the century, the association has been concerned ever since with the administrative and engineering problems involved in the distribution of power at the municipal level. Technical improvements and greater efficiency through standardized practices have been one of the greatest contributions the AMEU has been able to make to the users of electricity in the province.

At the heart of the association's success in this area are the guide books. Containing information virtually unobtainable from any other single source, the guides reflect the collective intellect and talent of the technical and business management personnel representing the 285 member utilities.

Subject matter runs the gamut from design, construction and maintenance of overhead and underground distribution systems and substations to utility office practices and public relations. Other guides provide information on drawing up specifications and contracts, and the design and operation of mobile communication systems.

This is not to suggest that the AMEU guides

by PAUL CHISHOLM

*Maintenance of overhe*
*is among th*
*technical subjects tr*
*the AMEU guide*
*Pooled know-how also*
*greater econo*
*efficiency through stand*
*office pro*





represent a single, approved way of doing things to be slavishly followed by all utilities under all circumstances.

"Far from containing a mandatory set of standards, the guides show methods of construction and operation in the various fields which are consistent with good engineering or management practices," states Stanley Webster, AMEU president. "The guides portray representative and sound methods, but in considering them, each utility must of course take into account its own peculiar circumstances."

The contents of the AMEU guides are no less valuable to those concerned with the distribution of electricity far beyond the boundaries of Ontario. Requests for copies are received not only from across Canada and through the United States, but from Czechoslovakia, Germany, Britain, Australia, New Zealand, Africa, Brazil and Argentina. In all cases the buyers are required to pay a fee to cover handling costs.

Outside-the-country applications of the guides include the electrical distribution system for the housing developments at the Cape Kennedy rocket base. And many Canadian army bases are also built to AMEU electrical system specifications.

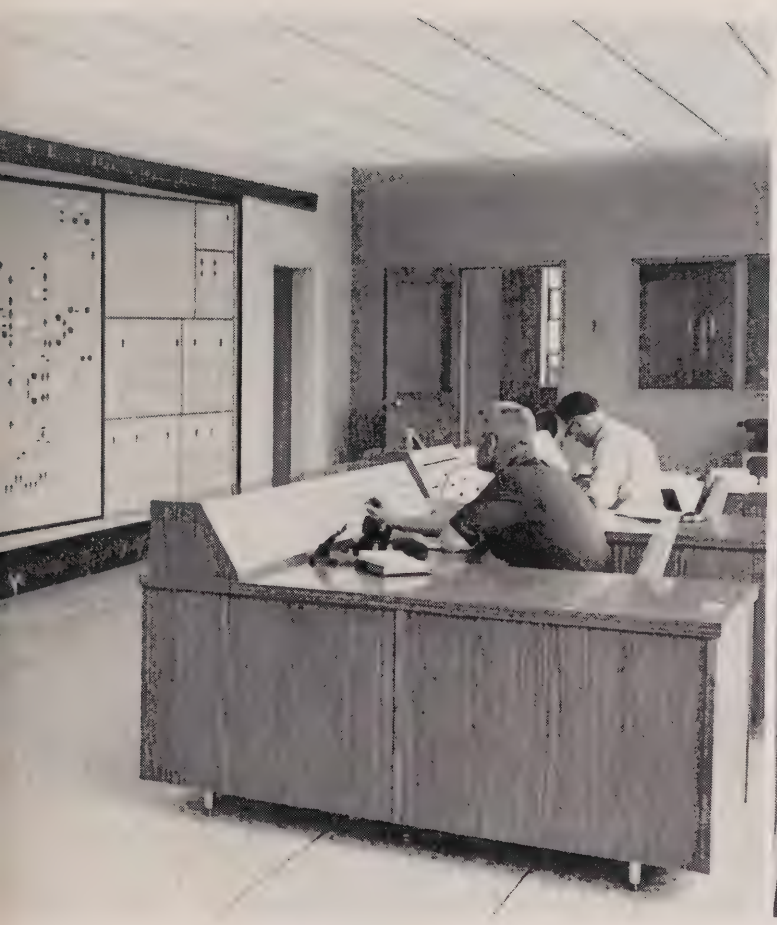
Six guides have been published by AMEU since 1955 and each represents up to five years concentrated study, investigation and preparation. Each "assignment" is handled by the standing technical or administrative committee of the association directly concerned with the particular subject.

Typically, a committee agrees to the general contents and draws up broad guide lines before getting down to specifics. Sections or chapters of a highly complex or isolated nature are frequently referred to appropriate sub-committees or individual specialists. For instanc
guide on substations contains a detailed s
on landscaping and fencing — subjec
removed from the immediate scope
original committee.

The value of this work is well illustrat
the guide to underground distribution s
construction. Still virtually in its infancy
country, underground wiring is now pr
ing at an accelerated pace and it is at this
where uniform procedures can cont
most. Costs, of course, are the greatest
deterrent to even more spectacular pr
and this can only be reduced by imp
techniques, materials and equipment.

"This guide pools the thinking and r
the experience of those utilities which ar
advanced in underground construction'
Webster explains. "It is impossible to es
the savings newcomers to this method o

*System design and control is dealt with in depth in the AMEU guides. The introduction of new equipment and techniques mean constant revision to the guides.*





can realize by consulting the guide. it alone and pay for trial and error when the best brains in the business n so generous in sharing their knowl-

e guides so far published, the know- ome 260 individuals representing 83 and organizations has been drawn luded are manufacturers' representa- Ontario Hydro specialists.

vork is usually involved before com- embers get down to writing and edit- nuscripts are then referred to the te section committee of the associ- analysis and revision. Final approval m board and executive levels before n.

on the manuals, however, is a con- rocess. "Hardly is a guide in print ere is need for expansion or further revision," states Mr. Webster. "Ours is an industry deeply involved in the technological revolution. Skills, methods and materials are changing rapidly and the committees constantly review each guide for updating."

Mr. Webster acknowledges that not all of the content in the AMEU guides is original. But he points out that, previously, this information had not been available between two covers for the mutual benefit of all utilities.

"Only the unique set-up of Hydro in Ontario makes the guides possible," he says. "The same togetherness does not exist anywhere else in North America. Certainly, no single utility could ever afford the manpower or cost involved in compiling these guides."

The guides are only one of several publications produced for disseminating information to members of the association. In fact, it was the need for a quick and reliable flow of intelligence in a great many areas which originally gave rise to the organization.

"With the earliest suggestions of a publicly-owned Hydro system for the province, the operators of steam plants or small hydro-electric stations in isolated communities found a need for close inter-relationship," Mr. Webster reflects. "In those days these plant operators were the only members of their communities with the necessary knowledge to advise their boards of trade or municipal boards on the technical aspects of joining such a system. By co-operating with each other and sharing their knowledge, these men laid the physical foundations for the Hydro system we know today."

Few, if any, of these pioneers realised the fund of knowledge which would eventually be built up. Least of all that it would prove an exportable commodity. □

# district 5 omea meets in st. catharines

## sales promotion technique upheld — local government in niagara area discussed

Delegates to the District 5 OMEA annual meeting in St. Catharines were advised that the committee reviewing local government in the Niagara area would welcome representations from Hydro commissions or individuals concerning their thinking as to the form any enlarged or streamlined administration should take.

Ron Farrow, secretary of the study group, declared during a panel discussion: "The committee has no pre-conceived ideas of the form future local government in the area should take. We are seeking opinions in drawing up our recommendations to the provincial government. The fact that some briefs from electrical utilities may be repetitious, in part, is all to the good."

OMEA president Dr. R. H. Hay said that if, as has been suggested, Hydro were to be administered by committees appointed by municipal councils, the temptation would be great for councils to use Hydro revenue for relieving taxes. "There is no reason why any enlarged regional government set-up cannot embody the principle of separate Hydro commissions," he declared.

Andrew Frame, Burlington, reported "favorable reaction" from all 12 members of the Legislature from ridings within District 5 to the district executive's personal representations relative to the Jones Report and the report of the Select Committee on the Municipal Act.

Mr. Frame quoted a letter from Ellis P. Morningstar, Conservative MPP for Welland, which declared in part ". . . . I certainly concur that these (Hydro) commissions should not be abolished in favor of municipal councils who already have all they can do in looking after citizens and ratepayers in any municipality . . . there should be no change in the present system of taking care of Hydro consumers in Ontario."

Lively debate took place by the more than 100 delegates present on a resolution from St. Catharines PUC which questioned the cost of last year's promotion program which offered a "bonus" electric blanket to buyers of electric dryers. The resolution, overwhelmingly turned down, suggested that other forms of sales promotion would be more effective.

It was stressed that bonus gifts were a common-place marketing practice throughout North America and one which has been adopted extensively by Hydro's competitors. It was pointed out that it is up to individual utilities to decide whether or not to take part in these promotional campaigns.

George E. Gathercole, first vice-chairman of Ontario Hydro, brought commissioners up to date on Hydro's construction plans to meet future power requirements. He said th proved output from hydro-electric statio year, resulting from higher water levels East System, had saved Hydro approxi $8,000,000 in coal purchases. It woul cost this much to make up the loss with t plants had 1964's adverse water con

continued.



*District 5 officers, left to right, standing: Gordon Klager, Fonthill, 2nd vice president; John Krestel, Port Rowan, Andrew Fra Burlington, Arthur Bennett, St. Catharines a W. S. Jennings, Niagara-on-the-Lake, directors; W Rannie, Beamsville, 1st vice-president. Seated, le Dr. J. D. Fleming, Dund past president: Jack Wra Jr., Brantford, president.*



*St. Catharines PUC mem Arthur Bennett, R. Douglas Hunter, J. Stanle Morrison and Mayor R. M. Johnston meet Geo Gathercole, 1st vice-chairman of Ontario Hyd*

# sions, progress and gional government

## se subjects were reviewed at the annual meeting of district 4 omea in toronto

ree years since its inception, member- the Ontario Municipal Employees nt System (OMERS) has grown from icipalities and local boards with 8,000 s to more than 800 employers with n the payroll.

impressive statistics were revealed by llman, secretary-treasurer of OMERS, cent annual meeting of District 4, in He said that of the 170 utilities who nbers of the former municipal Hydro lan, all but 10 had already submitted s authorizing participation in OMERS. 00 individual enrollment cards had so eceived from employees of this group ssions and more were arriving daily. n as a resolution or certified copy of a thorizing participation in the system ed from an employer, he told the an employer's instruction manual is letailing procedures, deduction from c., including a table outlining rates January 1st with the integration of da Pension Plan.

lescribing the basic features of the an, Mr. Millman observed: "All of ors contribute towards making this est pension plan available for muni- loyees in the province." He reminded that the plan was available to em- gardless of age, sex, occupation or of health.

ief review of the year's highlights, sident Dr. R. H. Hay attached par- portance to the appointment of a ecretary, with offices at 191 College Toronto. "The furniture has yet to quipped, "but the premises have an occupant in the person of Edwin o is now getting his feet wet in affairs."

ay prophesied that forthcoming municipal government organization tinue to the fore in the association's ns. "We must do what we can to arrive at the most efficient system," while preserving the status quo in o administration."

delegates on developments relative s report, A. K. Meen, Q.C., chair- OMEA's legislation committee, said ns expressed by municipal councils on the matter had been most gratifying. More than 40 councils, large and small across the province, had written expressing satisfaction with the established method of Hydro administration. They were not desirous of adding Hydro duties to their present responsibilities.

The opinions expressed had been very helpful, he said, in drafting a brief to the Minister of Municipal Affairs. One of the points established in the brief was the "extreme flexibility" of the present Hydro system. It was "readily capable of fitting into any form of municipal or regional government which the government may feel is for the benefit of the people of this province."

While no reply had been received from the Minister, Mr. Meen said "I am not pessimistic."

Mr. Meen also submitted a proposed constitution for Central Ontario District No. 4 to the meeting for approval. "We discovered that there was no official constitution for this district", he said, "which put in writing all those things we have been doing over the years as a matter of course. In establishing a revised schedule of membership fees, we have attempted to be realistic and at least come close to balancing our budget."

Membership fees were quadrupled and the annual meeting registration fee was increased to avoid future deficits in this area.

Among the points stressed in a brief address by Ontario Hydro Chairman W. Ross Strike, in reviewing progress on the Hydro front, was the need to profit from the blackout of last November. "I think this one occurrence has made the importance of interconnections very plain," Mr. Strike said, "and we must squeeze every possible lesson from the experience." □



*New District 4 executive, left to right, front row: Dr. R. H. Hay, Kingston, hon. vice-president; Jack Ramsay, Toronto, secretary-treasurer; J. T. Armstrong, Georgetown, president; W. Ross Strike, hon. president. Back row: E. D. Steer, Ajax and Elmer Archdeacon, Brampton, directors; A. K. Meen, North York, 1st vice-president; W. J. Fisher, New Toronto, past president; Elmer Wright, Toronto Township, director. Absent is D. H. Glass, Aurora, 2nd vice-president.*



*New OMEA secretary, Edwin Nokes, right, gets acquainted at District 4 meeting. Others, from left, are: John McMechan, Toronto, W. J Fisher, New Toronto; and OMEA president Dr. R. H. Hay.*

# hi, neighbor!

## mr. & mrs. kilowatt have been accepted in this st. catharines suburb like old-time residents



The new neighbors on St. Catharines' Grantham Avenue have settled in nicely, thank you!

Lawns and shrubs around the trim brick bungalow are kept in good shape, and the walk is usually the first clear of snow in winter. Modern window drapes suggest contemporary furnishings inside.

There are no noisy parties, although a rather staid mid-afternoon "house-warming" function was held last summer. Church attendance perhaps leaves something to be desired, but otherwise all the usual measurements of good citizenship are there — including quietness.

Hand bill distributors don't seem to know it, but the tenants are electrical distribution equipment and the landlord is St. Catharines Public Utilities Commission. Like many electrical utilities in heavily-populated municipalities, St. Catharines PUC constructed the bungalow-style distribution station to aesthetically blend into the neighborhood.

Including the transformer and switching equipment, the new station cost approximately $97,000. Maintenance costs are minimized because of both the design of the bungalow and the materials used.

Brick facing eliminates exterior painting, rough cast replaced the normal undereaves wood panelling, downpipes are copper and window frames and fascia board are stained. To discourage vandals, windows are armorplate glass, climbing footholds in walls are eliminated and a stone driveway discourages its use as a "playground." Vallance and exterior lights are switched on automatically at dusk and the walk is heated by electric cable.

To keep the building to bungalow height, the equipment floor was sunk as much as eight feet below ground. A section of electrically heated footing keeps the frost out and the warmth also cuts switchgear maintenance.

The transformer is housed outside, surrounded by a high wall to deflect its slight sound upwards. Space is available for a second unit to take care of future load growth. A "garage door" at the side of the bungalow permits off-loading of equipment by crane.

All new neighbors, of course, add something to a community. In this case, home owners noticed improved voltage supply with the elimination of black borders around the pictures of their TV screens.

Public reaction to the new tenants? Perfect. Not a word of comment has been received and the new neighbors have been accepted as though they had always been there. □



*St. Catharines PUC distribution st*
*all the attributes of a good n*
*Maintenance is kept to a minimum but*
*Alec Blackely performs hou*
*duties on occasional visits to th*




## nger Interconnections

-ordinating council has been formed to promote maximum relia- efficiency of electric service throughout a large section of North Ontario Hydro Chairman W. Ross Strike said it would strengthen connected CANUSE systems affected by the major power interrup- November.

visory group, called the Northeast Power Co-ordinating Council, de 22 utilities in the CANUSE (Canadian-United States-Eastern)

nsider formation of the council a major step toward providing ier standards of service throughout the CANUSE area," said Mr. t will enable us to extend the co-ordination and co-operation that ed between the inter-connected utilities for many years."

w council will promote closer liaison between member utility sys- provide improved channels for exchange of information vital to f inter-system operations, he said.

one of nine members of the executive committee, will be repre- Chief Engineer Harold Smith.

uncil's main function will be to provide a means for central and continuing review of system design and operation procedures ffect the inter-connected systems. □

## er Treatment Aid

nercial products group of Atomic Energy of Canada Limited has ne thousandth container of radioactive material for cancer treat- n its Ottawa laboratory.

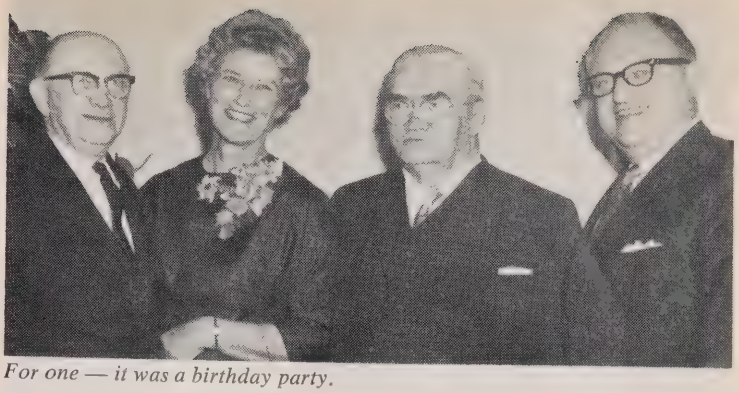
he early 1950s the group has sold more than 500 cancer therapy in 46 countries. These machines, pioneered by AECL, are capable g 500,000 patients a year. Twelve different designs have been put ce since the first commercial unit was installed. □

## nto Hydro Civic Night

lion dollar underground wiring program is expected to be com- the Bloor Danforth area of Toronto during 1967-68, John Mc- hairman of Toronto Hydro announced during the annual Toronto c Night banquet. The program would be dependent on manpower ing being available.

Mechan reminded his audience of 100 city and provincial officials o belonged to the municipalities. "In the beginning", he said, as created by people from the municipalities. They arrived in n April 11, 1906, via special trains. Over 1,500 crowded into the all to urge the provincial government to form a public power com- hen they walked four abreast to the Parliament Buildings where ved a promise the government would consider their request. By e commission was appointed.

o Hydro's growth is reflected in our income," the chairman said. mounted to $44 million in 1965 and assets had grown to $100 eaking on the cost of power in the city, Mr. McMechan pointed n 1912, one kilowatt-hour sold for two cents, while in 1965 a



*For one — it was a birthday party.*

kilowatt-hour sold for 1.25 cents. "What other product has come down in price during the last 50 years?" he asked his audience.

Frederick Gardiner, formerly Metropolitan Toronto's "Big Daddy", and now a Toronto Hydro commissioner, celebrated his 71st birthday on Civic night and was the recipient of the gathering's best wishes.

Hosts for the evening included, left to right: John McMechan; Mayor Beth Nealson of Leaside, which is served by Toronto Hydro; Frederick Gardiner and Mayor Philip Givens. □

## The People's Choice

The people of this province are the real beneficiaries of the unique Hydro system they themselves were responsible for setting up, Ontario Hydro Chairman W. Ross Strike told a recent meeting of the Ingersoll Chamber of Commerce. Under the Hydro system, he said, revenue was either ploughed back into the business or the rates were lowered.

"You give the customer full value for his money," he said, "if revenue producing services are kept separate from those which are tax supported."

Chairman Strike told the meeting that the chambers of commerce in Western Ontario had pioneered the Hydro system by urging its formation. He noted that representatives from Ingersoll had attended the first meeting held in Berlin (now Kitchener) to formulate plans which were to make Hydro a reality. He said Ingersoll, which celebrates its 55th anniversary of Hydro service this year, had been excellently served by its local Public Utilities Commission. □

## Sparkle Contest Winner



*He sparkled to the tune of $50.*

Christmas outdoor lighting contests are becoming increasingly popular throughout communities in Ontario, but in Sudbury, the annual Sparkle contest is a tradition which spans many years. Winner of the nativity scene section this year, D. Arsenault, centre, is shown receiving his first prize $50 cheque from Mayor Max Silverman, right, and new Sudbury Hydro chairman, Ted Dash. According to judges, there were more nativity scenes in the contest this year than ever, and the winner took top honors in an extremely heavy field of competition. □

## Hall of Memory



*Dr. Wilson, committee chairman, points to the past.*

The Joint Centennial Projects Committee of the OMEA-AMEU and Ontario Hydro previews a model of the Hall of Memory which will be on display at the joint annual convention, February 28-March 2.

Committee members include, from left: T. E. Dietrich, Ontario Hydro museum co-ordinator; John McMechan, Toronto Hydro chairman; J. A. Blay, Ontario Hydro's public relations director; James Hammond, Hamilton Hydro manager; Dr. V. S. Wilson, Etobicoke Hydro chairman; Stanley Webster, Tillsonburg PUC manager and AMEU president; L. W. Smith, Tillsonburg PUC chairman; Lt. Col. A. A. Kennedy, Ontario Hydro commissioner; E. F. Burbank, Toronto Hydro and J. A. Williamson, Niagara Falls Hydro manager.

The Hall of Memory will be located at the Sir Adam Beck Generating Station No. 1 and will commemorate the efforts of electrical pioneers in Ontario and the advent of public power. Accent will be on the role played by the municipalities. □

## municipal briefs

**St. Catharines PUC** was the winner of the Howard C. Daniels trophy at the 5th annual District 5 OMEA bonspiel. It was held in St. Catharines with Niagara Falls Hydro acting as host. Members of the winning rink were Bill Gall, skip, Jessie Gall, and Marion and Ken Richards. A Head Office rink placed second and Niagara Falls was third.

**Brampton Hydro** has a three year project underway to rid the downtown area of overhead wiring. The utility is also considering changing the 4,000-volt distribution system to 13,000 volts.

**Col. F. C. Curry, 74,** Brockville PUC commissioner, died recently. He served on the commission 12 years, three of them as chairman, prior to retiring from public life in 1957. He re-entered Hydro circles in 1962, winning a seat on the commission and he won re-election for a two year term in November. Col. Curry was a president of the Ontario College of Pharmacy and a director of the Canadian Foundation for the Advancement of Pharmacy. A member of the Ontario Historical Society, he was well known for his writings of Brockville and vicinity.

**South River PUC** voiced appreciation in a recent letter to Ontario Hydro's Northeastern Region. It read, in part: "Being one of the smaller and younger utilities we are very proud to be a part of the team representing Ontario Hydro and especially being affiliated with your area office. The co-operation we have received from everyone has been most appreciated."

**Port Colborne** became Ontario's 33rd city with the new year. It has a population of 18,000 and an assessment of $33 million. In honor of the occasion, Lt. Governor Earl Rowe formally inaugurated the new city council. Mayor Coleman Bagu said the change of status was necessary to meet problems of growing urbanization in his community.

**Beamsville Hydro** was praised for being the first municipality to submit a brief to the committee reviewing local government in the Niagara area. Speaking at the recent annual meeting of District 5 OMEA, in St. Catharines, Ron Farrow, secretary of the study group, told delegates that now was the time to say it in writing — not after the report was submitted.

**Port Elgin Hydro** recently sponsored a luncheon to announce a plan to establish a $1,000,000 transformer factory by Reliance Electric gineering (Canada) Ltd. It will employ between 60 and 70 persons be part of a chain which has locations in other parts of Canada States, Mexico, Switzerland, Japan, Australia and New Zealand.

**Ontario Hydro's** Sidney generating station and power dam on th River are featured on the front cover of this year's telephone direc the Trenton area. A brief description and history of the cover illu appears inside the book.

**Galt PUC,** which is responsible for the city's forestry program, plant 600 trees this year. Manager D. N. Durward reported that th and the city might look into the possibility of starting their own tree to raise seedlings. City council has allocated $6,400 for the tree-program this year.

**Gerry Coyle,** Amherstburg PUC manager, was honored by the com recently for 25 years of service. Leonard Duby chairman, preser Coyle with a wristwatch.

**On January 1,** Riverside and portions of the townships of Sandwi and West became part of Windsor. Adding 58,500 to the populat move makes Windsor the fourth largest city in Ontario. The Rivers Sandwich East utilities have ceased to exist while Sandwich Wes will serve the remaining population in the township.

**Joseph Mason** has been appointed manager of Ajax Hydro, succeed Sanders. A native of Collingwood, Mr. Mason had been manager of ville PUC for 12 years prior to the Ajax appointment. He served as m of Seaforth PUC from 1949 to 1952.

**Conversion** to electric heating is in full swing in Oshawa according t Baldwin, chairman of the PUC. In a review of electric heating prog revealed that 59 older homes had so far made the switch and 2 were in the process of changing at year's end. He said the total trically heated homes and apartments in the city had passed th mark.

**Peterborough** Utilities Commission will pay approximately $60,000 tario Hydro for distribution facilities in Smith and Duro Townshi utility will take over 131 customers in the area which was ann facilitate the all-electric Trent University development.

## Manitoba's Largest

Manitoba Hydro's new $120,000,000 station at Grand Rapids is the hydro plant in the province. The 300,000-kilowatt plant boosts the s capacity by 39 per cent.

Grand Rapids is connected to the network by two parallel 230,0 lines which carry power 260 miles south to Winnipeg.

## Thorold Veteran Retires



*After 30 years he's going to take it easy.*

John Halliday of Thorold PUC has decided to take it easy after 3 service as a commissioner. The 80-year-old veteran, a retired mec engineer, was feted recently at a dinner. Mayor Cecil Grose, left, pr Mr. Halliday with a scroll and Richard Buss, chairman, presented h an easy chair.

## orial to Robert Butter



*aking sure he'll be remembered.*

presented by the Association of Municipal Electrical Utilities in f Robert Butter, former secretary-manager of the Owen Sound dedicated in St. Andrew's Presbyterian Church recently. Mr. d been president of the AMEU in 1951 and later served on many s. He also served as secretary of the Georgian Bay Municipal ssociation for many years.

those attending the service were, left to right: Magistrate Alan S. tanley Webster, AMEU president; Mrs. Butter and Reverend Fred o present at the ceremony were: E. F. Burbank, vice-president, J. E. Wilson, 1st vice-president, OMEA; W. R. Mathieson, manager, n Murphy, manager, Barrie PUC; Lt. Col. A. A. Kennedy, Ontario l Owen Sound PUC commissioner; N. H. Robertson, chairman, nd PUC and Mayor Robert Rutherford, Owen Sound. □

## Hydro Ice Detector

ydro is now using ice line detectors which provide a continuous of ice build-up on a large number of 230,000-volt lines. Under ather conditions, rain freezing on power transmission lines can ious problems.

s of ice as thin as one-sixteenth of an inch can cause conductor " which can interfere with transmission. Heavier coatings can diminish power line carrier signals that communicate essential nd telemetering information. With ice coatings thicker than one extra weight and higher wind load may increase conductor sag ead to structural failure of the towers.

ice line detector, developed by the Electronics and Communica- on of the Research Division, gives a quantitative measure of ice eved before. The device is a combination of a specially construc- strength meter, which can be calibrated in terms of average ice and a transmitter operating at a continuous stable high-power diminishing of the communication or telemetering signals is nd recorded on the metering chart. Recorded signal weakness e build-up.

affected by ice can either be de-energized or the line current sufficiently to heat the conductors and melt the ice. □

## atts for Cars

ing speeded on an electric battery system that would replace gines in powering some buses, trucks and cars.

Dynamics, one of the biggest industrial firms in the United the Edison Electric Institute, representing many U.S. electrical nounced recently that they have been working on a new battery system since 1964. They pointed out that battery-operated uld ease air pollution problems as they generate no fumes. □

## l Giant Expands

al Nickel Company intends to build a new mill at its Stobie zard Township, just north of Sudbury, and to expand its facilities Cliff. To service these operations, Ontario Hydro plans to con- mile, double circuit, 230,000-volt line from Martindale Trans- ion to Copper Cliff. This customer will be the first supplied at 230,000 volts, but other industrial loads may develop in future which could be served advantageously at this voltage. Demand charges which allow for the lower cost of supply at 230,000 volts were recently authorized by Ontario Hydro. □

## Study Niagara Falls N.Y. Facelift

The U.S. Army Corps of Engineers is assessing the possibilities of facelifting the American Falls at Niagara, including the removal of tons of rocks from the foot of the cataract which have built up over the years.

Government agencies which have expressed interest in preserving the beauty of the falls run the gamut from Niagara Falls City Council to the U.S. Congress. Individuals endorsing the face-lifting range from city businessmen to President Johnson.

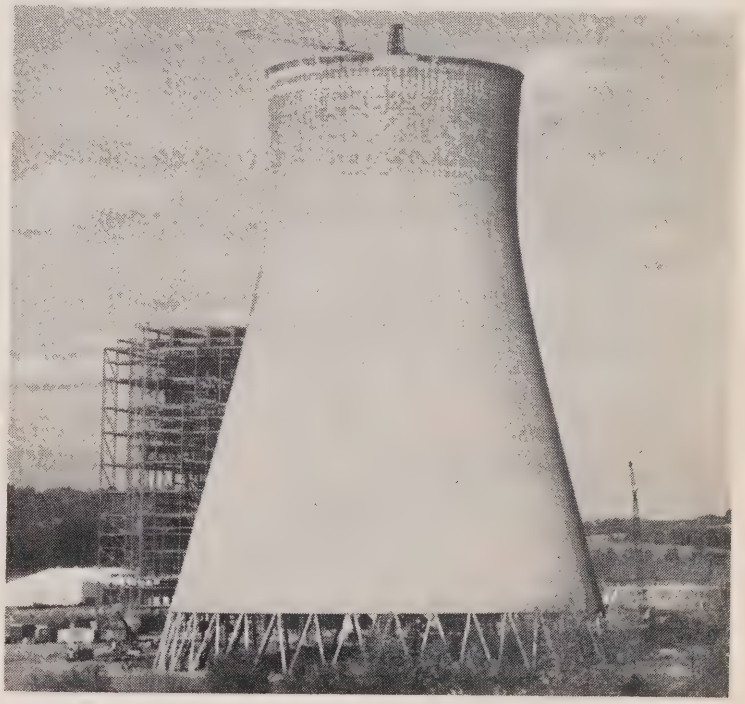
Representations from many of these groups and individuals were presented at a public hearing conducted by the Corps in January. Ontario Hydro was represented at the meeting by an observer. □

## Mine Mouth Generation

Instead of carrying coals to Newcastle, the 1.8 million kilowatt Keystone thermal plant was brought to the coal fields of Pennsylvania. This mine mouth generating plant, 35 miles northeast of Pittsburg, will obtain 60 per cent of its fuel directly from the mine by conveyor belts.

The absence of abundant cooling water was overcome by the construction of four cinched-waist, silo-shaped cooling towers. Each of the towers is nearly 325 feet high and a pair is required for each generating unit. Consisting of a chimney-like shell, supported on columns, the bottom is open to allow a massive flow of air upward through the cooling shaft.

Water, warmed in the condensing process, will be pumped into the towers for cooling, accomplished by spraying it downward over a vertical expanse of thin, flat asbestos-cement sheeting. The small amount of water



*A real cool tower.*

which evaporates from this exposure is responsible for a major portion of the cooling that takes place in the collecting basins under the tower.

The tower installation is the second in the United States but this procedure has been commonly used in Europe for a number of years. The new thermal plant, still under construction, is owned by seven Middle Atlantic states utility companies. The first of the two, 900,000 kilowatt generating units is scheduled to go into service in 1967. □

## Appropriate Light

Thomas Edison's birthplace in Milan, Ohio, was dedicated as a National Historic Landmark by the U.S. Department of the Interior recently. And to



*His light will continue to shine.*

commemorate the event, the exterior of the 124-year-old, red brick building, shown, was illuminated by a lighting system donated by General Electric.

Edison's daughter, Mrs. John E. Sloan, accepted the landmark plaque, which will adorn the home where the inventor was born on February 11, 1847.

Among the speakers at the ceremony was Worden Evans, Canadian Consul from Cleveland, Ohio. Mr. Evans, speaking on behalf of Canada, brought greetings from the Canadian government. The Edison family moved from Canada to Milan, prior to the birth of Thomas. □

## Largest Cranes for Pickering

The three electrically-operated tower cranes ordered for construction work at Hydro's Pickering nuclear power station are thought to be the largest of their type in the world. Being manufactured in Scotland, their clearance under the hook is 213 feet, almost the same height as the 18-storey Hydro Head Office building on University Avenue.

The working radius, the maximum distance from the tower at which a load can be picked up, is 164 feet and capacity is over six tons. For manoeuvrability, the tower structure can be mounted on either straight or curved rails.

Originating in Europe, tower cranes are a fairly recent development. They are particularly suitable for construction jobs where there are no obstructions such as neighboring buildings to prevent free rotation of the long jib.

As a safety feature, the crane is locked to the tracks when not in use, but the jib is allowed to swing free reducing the wind loads on the units. Delivery of the first crane is expected in March and by June all should be in operation. □

## Eagles vs Linemen

Penetang Area line crews are waging a running battle with an unusual antagonist and so far it's a draw. For three years in succession a pair of eagles have chosen the top of structure 66 on Hydro's 44,000-volt, wood pole transmission line between Big Chute and Ragged Rapids ge stations as their nesting site.



*Linemen are always in season.*

And for three years in succession, local crews have had to rer nest.The eagles have chosen an inaccessible battle ground where vantages are mostly theirs. For one thing linemen have to use he to reach the area. And eagles are protected by law against line there is nothing in the statute books protecting linemen from eag

The nests are a hazard to line security, especially in the winter, fall, linemen again flew in to carry out their annual removal chor been suggested that Hydro should attempt to provide an alternate structure but it seems certain the pair will prefer their own ele heated eyrie.

## Flat Champagne

The Champagne Pool, a scenic attraction in the Wairakei Geyser New Zealand, is losing its fizz, all in the cause of electricity. Si made bores began to draw off underground steam to make power, has steadily declined. Once it was a big steaming, bubbling pool heated water which overflowed onto a silica terrace. In the past t it has dropped 52 feet below the overflow level. An attempt to re pumping in 650,000 gallons of water has only made the level drop

## High Priced Water




*It costs more than the finest brandy.*

Each of these drums being unloaded at Douglas Point Nuclear Powe contains water, and each is worth $15,000. The water is heavy wat looks and tastes like ordinary water, but has special nuclear prope

Over 700 of these 55-gallon drums will be needed to fill the system — a total of $10 million worth of heavy water. Found i quantities in ordinary water and extracted by a large-scale indus cess, heavy water will be used both as a moderator (to keep t reaction of atom splitting going), and a coolant (to transfer heat reactor to the steam system).

Douglas Point, Canada's first full-scale nuclear power station, built by Atomic Energy of Canada Limited with the co-operation o Hydro. It will go into operation in 1966, generating 200,000 kilowa

## December Energy Production

Primary energy provided by Ontario Hydro in December tota 4.15 billion kilowatt-hours, an increase of 8.7 per cent over same month a year ago.

For the 12 months of 1965, the total is 43.58 billion kilow hours, up 7.3 per cent over the same period last year.

Adjusted for seasonal influences, primary energy deman December was 3.79 billion kilowatt-hours, 1.3 per cent less the previous month.

The seasonally adjusted total for December represents billion kilowatt-hours at annual rates. This is 327.1 per cer the energy demand in 1949.

# off the wires

as it sounds, scientists have discovered o produce usable amounts of electricity e fruit of the palm tree. Bacteria are break down coconut milk into formic om which an electric current can be d.

ding to our information, such an electrical has been used to operate a transistor ermittently over a period of 45 days. Be- ll is the U.S. Army which is interested in ng such a system, known as a biochemical for use in remote areas.

e Peterborough Examiner points out, it is hort step to utilizing the human stomach ectric cell. By swallowing a bacteria cap- a glass of milk, anyone could become a enerating station.

possibilities are mindboggling. Shaving e accomplished by plugging an electric o one's ear while radios and light appli- ould be operated simultaneously from lets.

cientists point out, further, that a some- nilar system could be used to produce rom sugar cane, yams and fruit.

juice we are prepared to swallow but am seems a bit thick.

time ago we had occasion to mention acy of electricity as a means of preventing ulgence in alcoholic beverages. That in- diabolical scheme whereby the embiber a nasty jolt each time he raised a wired is lips.

ad our doubts about that one, finding it conceive of anyone idiot enough to go on toot without a voltmeter along, but now ord of a similar cure for gambling. The an unnamed Londoner, had been in the blowing his $60 weekly pay every Friday -armed bandit in the local pub. Voluntarily g to psychiatric treatment, the gambler ly saw nothing untoward in finding an -goodness slot machine in the corner of doctor's office.

ssed it — the machine was wired and e the culprit spun the bells and lemons, ved a 70-volt message from the British y Board. Despite jolts every minute, the ist reports, the patient's compulsion was that he was prepared to take up to 600 shocks before he showed a reluctance to playing.

y well if his reluctance was due to the y and not just to a shortage of funds. Or e thought, after 600 tries, the machine d in favor of the house.

y seems quite sure what it is but they where it came from and what it was own being examined by Mo Shepherd of trical Utilities Safety Association, "the as sent to him by Clyde Fife, manager of Hydro. He found it capping a pole on s original distribution system which was graded from 2,200 volts to 4,160 volts.



The only specimen of its kind on the line, it consists of a cast iron "pot" supporting a wooden pin which, in turn, supports a glass-type insulator.

Other clues include the word "petticoat" and the date "1893" raised on the side of the insulator.

"It must weigh 15 pounds", Mo comments, "and it does have merit. It would be easy to install with lag bolts and it protects the top of the pole. Judging from the condition of this one, it should last forever but it seems to me a bit like using an elephant gun to shoot a mouse."

A prized addition to Mo's collection of old and unusual pole hardware, "the thing" may eventually wind up in Hydro's museum-in-the-making. He would appreciate hearing from anyone familiar with the device.

■ Bears figured in the Hydro scene on a couple of occasions last year — one ending happily and the other in tragedy.

With the aid of the Capreol Hydro ladder truck, foreman Rene Sauve succeeded in prodding a 90-pound bear cub out of a tree on a residential street. The baby bruin led spectators on a merry chase through the town before he was hogtied, loaded on a pickup truck and released in surroundings more to his liking.

In Whitney Township, a miner lost his life in attempting to rescue a bear trapped on a Hydro pole. He was inching toward the animal when he contacted a conductor and fell to the ground. The bear climbed down unaided and ambled back to the bush.

Animals seem to have a penchant for utility poles and in most instances they will eventually return to terra firma if left to their own devices. In any event, if rescue is to be attempted, it must be carried out by properly equipped people with an intimate knowledge of the installation and the dangers involved.

■ Electric heating will get a test against gas heating in a project planned by an Ohio gas company, according to Electrical World. The gas utility is building two identical homes — one all-electric and the other all gas. Purpose of the project, it says, is to compare heating costs of the two structures. Instruments to measure temperature, humidity and fuel consumption will be on a lot separating the houses. Each will have identical compass orientation and exposure to sun and wind. They will be occupied by families.

Families — there's the rub. People are creatures of habit and it would be a shame if the electric house found itself occupied by bath-loving, fresh air fiends with a tendency to be absent minded. "Willie, how many times have I told you to close that door?"

■ People are growing fat on the amenities of electrical living but the gas company is putting them back in shape — if we construe the implications of an article in a recent pipeline company pamphlet correctly. "Latex plus natural gas equals slimmer, trimmer, women", reads the lead on a story about girdle manufacturing. No doubt some gas is natural in women but to suggest that this fossil fuel is best for girdle making is stretching things a bit. Succeed or bust seems to be the company's motto as it also turns out a well-rounded line of brassieres in 19 styles. Whether its operations can be described as up-lifting or restrictive is a moot point but it's the gals who will feel the pinch.

■ Fringe benefits run the gamut from coffee breaks to subsidized sandwiches these days but one of the latest is the right for male employees to enjoy whatever visual attractions may be inherent in the current trend towards short skirts.

Tailor and Cutter, an authority on style and clothes, brought this out in a recent swipe at short-skirted secretaries who demand modesty boards. Modesty boards are strips of wood across the front of a desk and a recent poll of British secretaries indicated that most favored them to prevent revealing too much leg.

"Women resort to any trick in order to attract a man's attention," scolds Tailor and Cutter, "and then they get morally affronted when you look. All they are after with their little short skirts and modesty boards is power without responsibility."

In explaining its own stand, the staunch British journal says:

"We are not allowing modesty boards in Tailor and Cutter House. A secretary with a pair of pretty legs has always been regarded as a fringe benefit in an organization which has few other seductive attractions to offer."

Hear! Hear! But why not carry the whole business a step farther and establish a licensing board with full power to determine which females truly constitute a fringe benefit in a short skirt. □

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# ontario hydro news

march / 1966

- new look in electric trains
- from pigs to horses in twenty-four hours
- commissioners speak with one voice

ontario hydro news
march / 66

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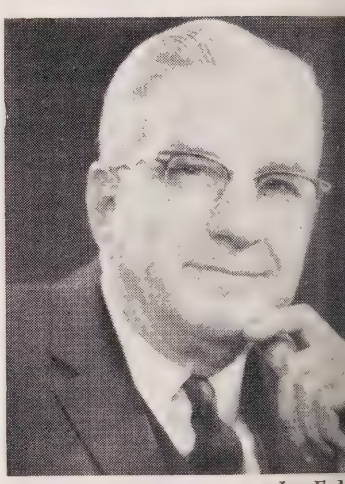
*George E. Gathercole*



*W. Ross*



*D. P. Cliff*



*Ian F. M*

# commission appointment

Prime Minister John Robarts has announced the appointment of George E. Gathercol as chairman of Ontario Hydro, effective April 1. He had been first vice-chairman.

Mr. Gathercole replaces W. Ross Strike, 70, who is stepping down March 31 almost five years as chairman and 22 years with the Commission.

Succeeding Mr. Gathercole as first vice-chairman is Commissioner D. P. (Bud)

The appointment of Ian F. McRae, P.Eng., as an Ontario Hydro commissioner had announced by Mr. Robarts, in February.

Mr. Gathercole, who becomes Hydro's 10th chairman, was appointed first vice-cha of the Commission on December 1, 1961. He was chief economist of the Ontario ernment for more than 17 years following World War II and closely identified wit economic planning of the province during a period of unprecedented growth.

Born in Hamilton, Mr. Gathercole graduated from McMaster University and the versity of Toronto in economics and did post-graduate study in England.

In announcing the changes, Mr. Robarts said of Mr. Strike: "The people of Ontario him a great debt of gratitude for the accomplishments and achievements of Hydro long years of association with the Commission".

Mr. Strike has devoted many years of his life to public service, particularly in the fi municipal and provincial hydro-electric systems. He was a member of the Bowma Public Utilities Commission from 1932 until May, 1961.

D. P. (Bud) Cliff, who recently stepped down as secretary-treasurer of the OMEA 13 years, is vice-president and sales manager of Dominion Lightning Rod Compa Dundas, a business which has been in the family for three generations.

Ian F. McRae, former chairman of the board of Canadian General Electric Con Limited, brings a wealth of experience in the fields of electrical and nuclear engine to his new post of Hydro commissioner. He has an honorary Doctor of Science d from Laval University.

The Commission also includes Robert J. Boyer, second vice-chairman, and Lt. Col. Kennedy, commissioner.

Further details of the appointments will appear in the April edition of Hydro News

# tender loving care

by LOIS LANE

## infra-red electric heating has been added to the very special treatment accorded these handicapped toddlers

When science has done all it can and the future remains bounded by tomorrow, tender, loving care takes over at the Ontario Homes for Mentally Retarded Infants, at Plainfield, Ontario. This low, rambling hospital just north of Belleville cares for mentally retarded infants with severe physical defects and it stands as a tribute to a dedicated Dutch couple whose chief asset when they landed in Canada over 40 years ago was the size of their hearts.

Today, this modern and efficient hospital is operated by a staff of 60, including nine graduate nurses, and the specialists and facilities of the Belleville General Hospital are at its disposal. This is a far cry from its beginning in 1951 when it was operated as a private institution in a residence in the nearby Village of Halloway. But the institution's underlying foundation of love, understanding, hope and infinite patience has remained constant — instilled by its founders, Mr. and Mrs. Leonard Vellemen.

The affable Mr. Vellemen, hospital administrator, credits his wife with the original concept of the home for retarded children.

"She did general nursing for many years", he explains, "and one day someone asked her to look after a mentally retarded child. That started the whole thing. She has always been a champion of the underdog and her heart went out to these unfortunate youngsters.

"From the start we have been constantly expanding", Mr. Vellemen recalls. "Our original hospital on this site was an old hotel. A more unlikely set-up would be hard to imagine. It didn't even have electricity and now we have



an $8,000 diesel generator just for standby purposes. It clicks on automatically in the event of a power interruption."

Directed by a board of governors since it was incorporated in 1956, the home is now subsidized by the Ontario Hospital Services Commission but it still relies heavily on donations from its members.

"Our membership is composed of a cross-section of life", Mr. Vellemen points out. "It includes many large corporations, service clubs and employee organizations, as well as interested individuals and parents."

Membership entails an annual donation of $10 or more.

A simple plaque outside the hospital's latest addition bears testimony to this support. It reads: "We gratefully acknowledge the James H. Cummings Foundation Inc., through whose generosity this solarium was made possible."

In fact, the solarium introduced a new element to the very special treatment accorded the 65 young patients — infra-red electric heating. Thought to be the world's first application of this kind, the solarium-heating combination provides the toddlers with 5,000 square feet of "outdoor" play space all winter long. Even children confined to their cribs and chairs around the perimeter of the glass room benefit from "almost being outdoors."

"One of the main problems in heating any glass building is heat loss," explains Cliff Booth, sales representative of the rural operating area served by the Belleville Utilities Commission. "To combat this, we came up with the idea of heating the people and objects in the room, rather than attempting to heat the air".

This is accomplished by 32 infra-red f strategically located along the ceiling walls. The heat from these units is ab by swings, teeter-totters, cribs and other ishings. As well, the heat is held in th inch thick rubber flooring — a warm s which is ideal for playing and softe many tumbles taken by toddlers.

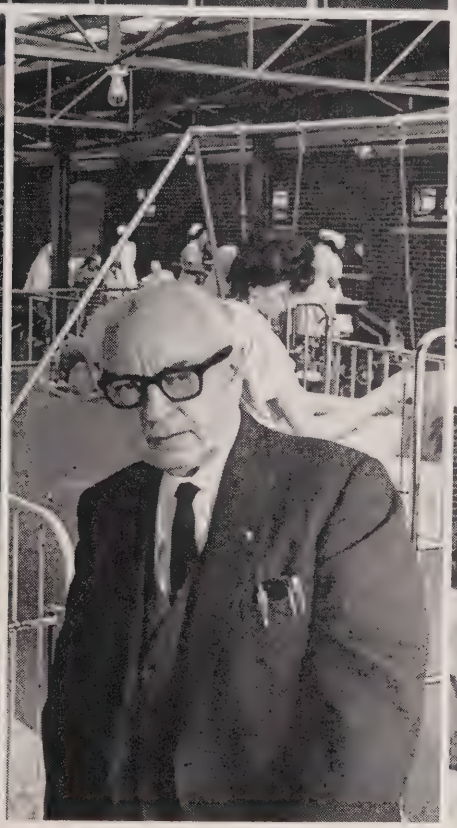
The heating installation consists 4,000-watt units, seven 3,000-watt uni four 1,250-watt units. They are arran banks and controlled by 10 switches l in a cupboard at one end of the solari

The Belleville Utilities Commission, serves nearly 11,000 city customers an than 3,200 in Ontario Hydro's rural ar a special line to the premises to servi solarium heaters which are metered sep

"The installation was made in De









far there have only been two meter
," says Bill Hales, the utility's office
. "But the cost for this type of heating
working out to 1.35 cents per kilo-
r."

t's money well spent according to
authorities.

thing we have noticed" comments Mr.
n, "the children have not had a single
ce they commenced spending the
of their waking hours in this room.
dence of fever is definitely down and
ılatory patients are 100 per cent more
w that they have a place to roam."

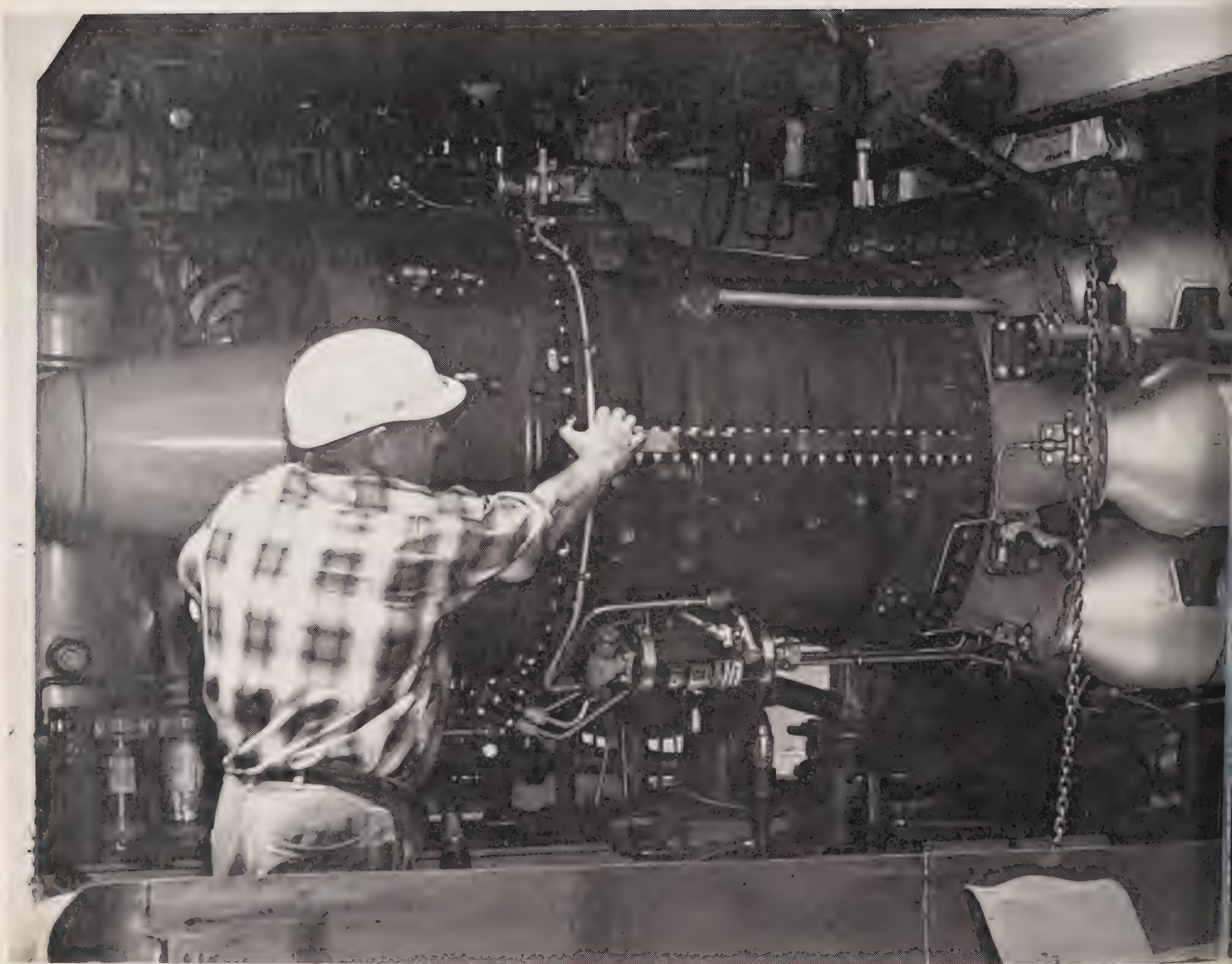
y and large expanses of glass are not
ompatible but they have been brought
in the case of the solarium with the
:orgian polished wire glass and bron-
'ed screening fitted close to the exter-
ior glass panelling. The effect is that of two-way glass. The children and staff enjoy a clear view of the country-side while, to the passers-by, the walls are a deep opaque grey.

"In the summer we will simply remove some of the panels and the children will be outdoors," Mr. Vellemen points out. "The screening not only confines the children to the solarium, but offers protection against insects. Most of them don't know what a fly looks like."

Some will see nothing but heartache and hopelessness in the humanitarian undertaking upon which the Vellemen's have chosen to dedicate their lives. Thankfully, this dynamic and devoted couple are of a different breed. "There is no guide line where the life expectancy of our wards are concerned," they agree, "but with the proper care and affection these children often defy medical prognosis." □

*From the ceiling, rafters and wall, infra-red electric heaters radiate warmth on the people and objects in the solarium below. Founders of this home for mentally retarded infants, near Belleville, are Leonora and Leonard Velleman.*

*Gas-producer unit like those for Hydro's smaller packaged units is shown at Orenda plant. Assembled Westinghouse units at Manby S.C. are viewed from top of fuel storage tank which holds half million gallons. Start-up batteries being checked are at Manby installation.*



Stationary jets paradoxical? Not necessarily. The unusual procedure of bolting to the floor a thrust force often associated with high-speed jet travel is becoming increasingly common as electrical utilities throughout the world grow in size and complexity.

Seeking the economies of size through the use of large steam units with ranges up to 500,000 kilowatts and beyond, utilities are finding the oil-fired gas turbine more and more useful for operating flexibility and peaking purposes.

Driven by jet-type engines, these turbo-generator sets, which burn a distillate fuel oil, differ from conventional steam turbines in that gases from the burning oil instead of steam turn the blades. They are started by either small diesels or direct current motors supplied by batteries.

Ontario Hydro placed its initial $10.3 million order with Canadian Westinghouse and Canadian General Electric, in August, for six of the "packaged" units with a total capacity of 95,280 kilowatts. Four of these generators have been installed at the A. W. Manby service centre in Etobicoke, and two at the Scott transformer station in Sarnia. Two were commissioned by the end of January.

An $18 million contract for 19 additional generators has since been awarded. W house in Hamilton will supply six, 1 kilowatt units at a cost of $10.6 millic Orenda Industrial, a division of H Siddeley of Canada, at Malton, will p 13 combustion turbine generators, each capacity of 7,500 kilowatts. They will ready for action next winter.

Present plans are to locate four of th units at Detweiler transformer station, ener, and to add two to the pair already led at Sarnia. The smaller Orenda packages will be located at each of H four major thermal stations in Toronto

# packages









Lambton and Windsor.

new oil-fired units are being located
s of heavy industrial concentration for a
of reasons. Many of the hydro-electric
sed to meet peak power requirements
ated hundreds of miles from load
— some as far as the James Bay water-
y placing the packaged units as close
ible to where the electricity will be
e losses are reduced. Too, the danger
smission problems shrinks with the
ines.

nits at the thermal stations will have
ole. In addition to their peaking contributions to the grid, they can be used in an emergency to start up the big stations' auxiliary equipment and speed up their return to the system after an outage.

In an emergency it takes only six or seven minutes to bring the packaged units from a standstill to synchronization and they can be operating at full load in 11 minutes. A conventional steam-operated unit takes several hours to reach capacity from a cold start.

Like most good things, however, the new oil-fired power plants have their drawbacks — in this case, fuel costs. Per kilowatt, fuel costs more than three times as much as for the Commission's large coal-burning plants. At Manby, for example, the four units will each consume about 1,400 gallons of fuel oil an hour when running at capacity. A storage tank capable of containing half a million gallons of oil has been installed.

But thirsty or not, the oil-fired gas turbine has an important role to play in modern utility operation. While the new Hydro units will only be used for short periods, having them available in the right place for use at the right time is the over-riding consideration. They will pull their weight by the flexibility and security they add to a complex system. □

# all aboard for tomorrow

Inter-urban electric railways, a late 19th century development, are making an international comeback in helping solve the 20th century's mounting transportation problems.

Rapid rail service between cities and the linking of major centres with their sprawling suburban dormitories are seen by many traffic authorities in North America, Europe and Asia as the best way to woo the commuter-driver from behind the wheel. Conscious of rising costs for new expressways and highways — plus difficulties in obtaining land on which to build them — governments and planners are looking with increased favor on mass transportation. Electricity is to the fore in much of their thinking.

Travelling many times faster than Ontario's inter-urban "electrics" of half a century ago, the electric trains of today and tomorrow will depend on electronics to combine speed and safety. Besides travelling on traditional surface-level tracks, some may be routed deep underground and others on elevated monorails. Envisaged for underground systems are trains travelling on cushions of air or as free pistons in tubes — much like the capsule in a department store pneumatic delivery system.

Japan can take much of the credit for the re-awakening of interest in rapid transit trains. World pacesetter in the modern era of rail transportation is the Tokaido Express of the Japanese National Railways. Incorporating aerodynamic styling, advanced design techniques and methods of roadbed construction, the electric trains gobble up the 320 miles between Tokyo and Osaka, Japan's two largest cities, in less than three hours.

Too fast for conventional signals, an automatic train-control system is coupled with a signal board in the cab of each locomotive. In the Tokyo control centre the location of every train is shown on a 60-foot panel with rows of flashing bulbs. Engineers follow varying speed instructions from small lights inside the locomotive cabs.

Passenger trains operating at 150 miles an hour are expected to be in service between New York and Washington by 1970. The Pennsylvania Railroad has contracted to put 50 new electric cars on the run, which has been promoted by the U.S. government.

Within the next 15 years planners foresee commuter trains serving the entire 450-mile corridor between Boston and Washington — now almost completely urbanized — at speeds up to 300 miles an hour. These and other trains may travel at least part of their routes deep under the ground.

Economy-minded planners favor deep tunnels because of the cost

PHOTO COURTESY BUDD





of buying up rights-of-way for surface roadbeds. An added advantage over shallow tunnels is that it is not necessary to move existing utilities such as water lines, electric cables and gas mains. Planners contend that the cost of boring through bedrock may not exceed that of modern superhighways.

Powering the rapid, deep-underground train poses special problems. Dean W. W. Seifert of the Massachusetts Institute of Technology, a director of Project Transport, a long-range study of U.S. transportation, sees two alternatives: the linear-induction motor in which part of the electric motor is in the vehicle and part is extended in the guideway along which the vehicle runs; and the pneumatic tube concept.

Jet engines and propellers have also been suggested. But, warns Dr. Robert J. Hansen, a fellow Project Transport director, whenever chemical fuels are burned in a tunnel there is the problem of air pollution.

"The air would have to be changed constantly and although engine noise might not be too much of a problem underground, people are going to object to the noise of propeller-driven or jet engines on the surface".

Future trains may also be non-stop, making it possible to average much greater speeds between such points as Boston and Washington. A car with passengers boarding at an intermediate point would accelerate and join the train, while a car with passengers for the same point would drop off.

"Toting commuters by computers" might be an appropriate de tion for a rapid transit experiment now underway in California' Francisco Bay area, where a four-mile segment of a $1 billion tronically controlled commuter complex is being tested. The tes will eventually be part of a 75-mile system of roadbeds, elevated tures and twin underwater tunnels which link San Francisco i west with communities to the east side of the bay.

Gambling on separating the commuter from his automobile system is designed to speed passengers to work at 80 miles an ho quiet, comfortable cars gliding over rails at 90-second intervals.

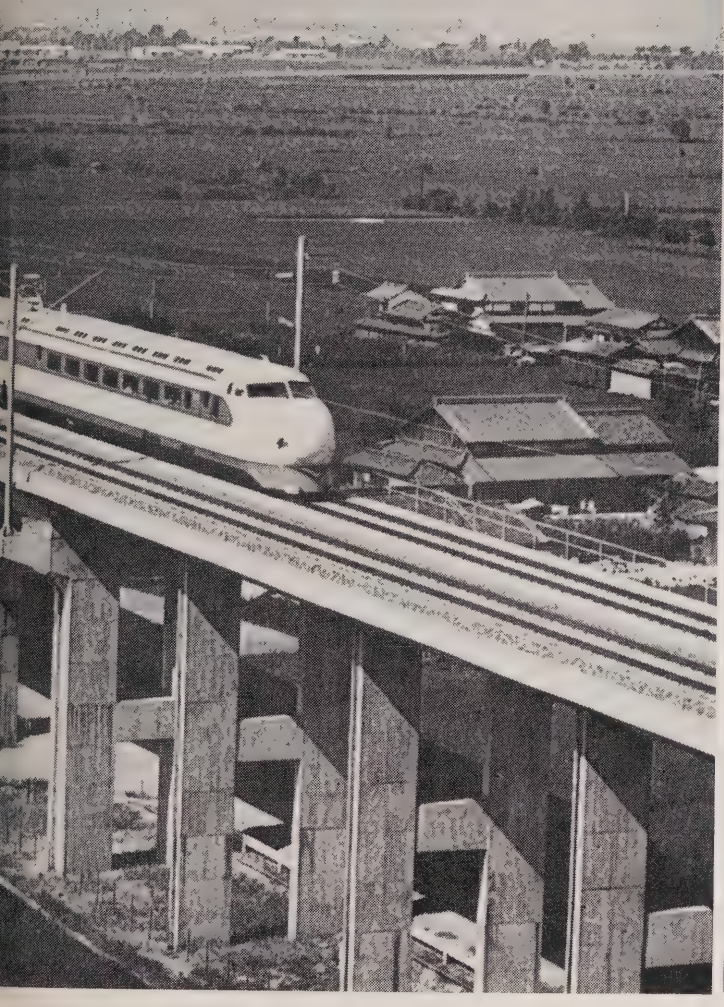
Engineers on the California test project are exploring the po use of three-phase alternating current instead of direct curren propulsion. The system would be more expensive in terms of c cost, but the experts say it promises long-term operating econo Power bills might be on the order of $3,000,000 a year.

For above-surface rapid transit the monorail is frequently ment as the ideal means of connecting airports with downtown areas. straddle or are suspended from heavy track beams. The beams co live rails from which DC motors take current.

Often considered something new in transportation, the first r rails actually began operating in Europe in 1887 — the same incidentally, that Canada's first inter-urban electric train went int vice between St. Catharines and Thorold.

Highly sophisticated in their development since World War I capable of 75 miles an hour, monorails have the vital cost fac

**long mesmerized by the auto, planners from tokyo to toronto are looking with increased favor on mass transportation . . . and electricity figures in much of their thinking**





*Electrically-driven Tokaido Express, fastest train in the world, crosses over a super-highway on run from Tokyo to Osaka. The 320-mile trip takes about three hours. Demonstration monorail coach in France is driven by electric motors at speeds up to 75 miles an hour. System can be adapted to carry utility wires, including Hydro, telephone and telegraph.*

avor. Capital costs, including running stock, electrical systems arshalling yards but excluding rights-of-way, are said to be one- o one-fifth that of today's subway systems.

st of the monorails operating in various parts of the world have uilt as tourist attractions in parks or at exhibitions, or for testing ses. Japan, again, has pioneered the concept in a full-fledged ercial operation. Opened two years ago, the monorail between own Tokyo and Haneda Airport is said to cut conventional travel y 80 per cent.

ada's first monorail system is scheduled to begin service at ontreal World's Fair next year. Providing secondary transporta- r patrons, the six-mile system will cost a total of $9,000,000.

honor of being the first fully-automated train in North America so go to Montreal where an $18,000,000 electric system is being cted to carry fair-goers from the mainland across the St. Law- iver to the Expo site at the rate of 30,000 an hour.

naller and slower-moving version of the monorail — the minirail heduled to operate around the two-mile perimeter of Toronto's an National Exhibition grounds in time for the 1967 exhibition. ul, certainly, but these small, special purpose systems are little an curiosities in comparison to the schemes completed or on wing boards of the transportation engineers. Rapid inter-city an rail transit of the future has several directions in which to . Whatever the course, electricity will contribute substanti- □

**commuter-computer** Ontario's new inter-urban rail commuter service, to be inaugurated within the Golden Horseshoe next year, represents the first time in Canada that a provincial government has undertaken the responsibility for fast and frequent mass transportation. The 52-mile Burlington-Toronto-Dunbarton lakefront service, geared to handle 6,000 passengers an hour on daily treks to and from the job, will also serve as a guide to the development of future commuter lines in metropolitan areas.

Canadian National Railways will put aluminum, air-conditioned cars into the new service and the diesel-hauled trains will be capable of speeds up to 80 miles an hour. Conversion to electricity could be made in the future for faster pickup as trains leave stations, but the service is meanwhile limited to a minimum of 20 minutes between trains because of the bottleneck at Toronto's Union Station.

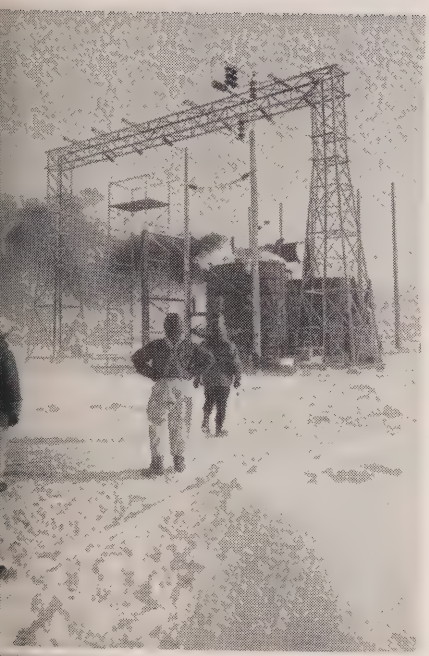
An electronic ticketing machine will be a feature of the commuter service. It will not only refuse to admit persons with invalid tickets but won't let anyone off who tries to cheat by riding farther than his fare allows. Passengers will feed plastic tickets into a commuter-computer which controls platform gates electronically.

The Ontario Government is investing nearly $12,000,000 in the new service and will provide an annual sudsidy of $2,000,000 — approximately two-thirds the cost of building one mile of elevated expressway.

Studies of further commuter needs for the area are underway. Planners already foresee the day when a continuous city will exist from Oshawa to the Niagara frontier. □

# this fire was set deliberately!

*(a photographer just happened to be on hand)*





*These firebugs are at work with Hydro's blessing as their efforts are aimed at affecting economies and improving service security. All manner of recording devices charted progress of blaze.*

One cold, blustery afternoon in January a dozen parka-clad men advanced silently on a Hydro transformer located on a Lake Ontario site about 20 miles east of downtown Toronto.

Working with watch-like precision they affixed incendiary equipment to the top of the oil-filled transformer and spilled gasoline where it would be the most effective. Cloth and filter paper dangled over the edges near a device attached to two wires leading 20 feet to the ground.

One man nodded. Another pressed a button. Atop the transformer a spark jumped, gasoline puffed into flame, and the oil was alight. Gusty winds whipped it into an inferno.

But agent 007 had nothing to do with it. These men worked for Ontario Hydro and this was only the first of a series of fires they plan involving obsolete transformers and rigged station equipment. All manner of recording devices and charts surveyed the course of the blaze and it was extinguished without difficulty.

What's it all about? Contradictory as it may seem, the fires are being set to improve service security and effect economies in the face of rising costs and changing technology.

Not only are there more transformers, but they're getting bigger. Land costs are going up and there is a real need to make the most of every square foot of station space. And the farther apart the transformers are placed, the more it costs for connecting equipment.

So the tests are designed to find out, among other things, how close they can be located and still ensure that fire in one transformer doesn't ruin its mate. Are protective barriers the answer and, if so, what kind and what height? Later in the tests, various sizes and types will be tried out. Insulators, conductors, steel structures and poles are set up at various proximities to determine the fire's effect. In the past, data came mostly from "post-mortem" methods.

Changing technology adds another dimension. The trend to more and more remote supervisory control can widen the interval between the start of a fire and arrival of firemen.

Detailed information hasn't been available for the Ontario Fire Marshal's office or the National Research Council, but both are vitally interested. They arranged for observers to watch the tests, as did the Pickering Township Fire Department. Hydro's own fire fighters are taking advantage of the tests to refine techniques and train staff from around the province.

Despite bitter cold, icy winds and intermittent snow, the oil ignited more readily than expected. Steel bracing members on a 20-foot-high frame five feet away buckled as did the metal supports under the overhead oil conservator tank, showing that the fire generated intense heat, reaching 1500°F. at one point. Even a pole upwind of the blaze charred.

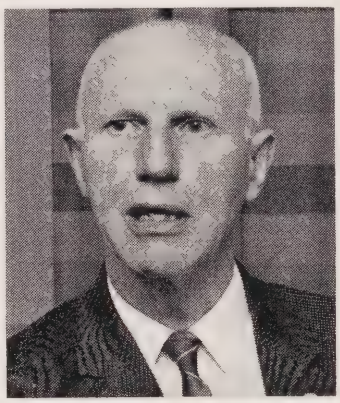
Many tests and months of expert assessment of results lie ahead. Among the dozens of questions to be answered are the effects of such fires on near-by areas paved with asphalt; how effective crushed stone is in limiting the spread of ground flames caused by spills and spatters; and how much water is required to douse a fire that might have an hour's head start. □

# selection of presidents ensures that both associations will continue to enjoy top-flight leadership

Attendance records toppled as some 1,350 delegates streamed into Toronto for the 57th joint annual meeting of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities, February 28 - March 2.

Representing local Hydro commissioners and technical and management personnel of the utilities, delegates came from municipalities as far removed as Hawkesbury and Port Arthur, Capreol and Windsor.

Among the vital issues facing this year's convention were power costing procedures and Hydro administration at the local level. Both subjects are discussed on these pages together with other views by leaders in the municipal utility field in Ontario.



*Dr. James E. Wilson*

**"Every commissioner must accept responsibility in his community to further the dialogue on the vital principle of keeping revenue-producing municipal services distinct from tax-supported services."**

Anyone calling upon individuals to give of their utmost for a cause or organization will likely get the best response by setting an example. This being one formula for success, the Ontario Municipal Electric Association is assured of continuing achievement under its new president, soft-spoken Dr. James E. Wilson of Barrie.

Giving his utmost in life has undoubtedly been Dr. Wilson's guiding principle in both private and public capacities. In his new role he declares: "Like any organization, the OMEA is as strong as its individual members. We must put as much as possible into meeting our responsibilities at local utility level right through to the top offices of the association. Only maximum effort will achieve maximum results."

A life-long resident of Simcoe County, Dr. Wilson was born on a farm near Alliston in 1901 and received his early education at area schools and Alliston High. But for a crippling injury sustained at the age of 24 during a wrestling bout he seemed destined for a promising career in agricultural science. At the time he was attending Ontario Agricultural College at Guelph.

Despite the excruciating pain he was constantly to know in the next few years, he went on to graduate in 1927 and for the next three years worked for the Dominion Live-stock Branch out of an office in Paris.

"Nothing seemed to help," Dr. Wils calls, and I seemed destined for a wheel when a life-long friend of the family a me to consult an osteopath.

(Osteopathy is a system of medical pr based on the theory that many diseas due to structural abnormalities which c restored by manipulation, plus the a medicines, surgery, proper diet and therapy.)

Such was the relief of pain under osteo care that Dr. Wilson became intense terested in the science and decided to st While undergoing treatment, he att Kirksville College of Osteopathy and S in Missouri, graduating in 1934. (He poi that he is still convalescing from a fra hip suffered in 1962 — which accounts f cane he carries.)

The same year, Dr. Wilson opene practice in Barrie. Such is his devoti osteopathy that he has served three ter president of the Ontario Osteopathy As tion and is a past president of the Can group.

Dr. Wilson first entered municipal when he was appointed to the Barrie Bo Education in 1943. In subsequent yea served various terms as alderman, d reeve, mayor and a member of the P playing no small part in guiding the ci wards its present status as one of the growing industrial centres in the provin 30 years the one-time retired farmer's has trebled in population to 24,000.

Dr. Wilson was appointed to Barrie Utilities Commission in 1953 to fill a expired term — and has been re-elected since. He is past-president of Georgian Municipal Electric Association and has s on a number of OMEA committees.

Calling for greater liaison between and the Department of Municipal Affair Wilson emphasizes the need for closer co between those discussing proposals for re government and those affected by them.

"It must be made abundantly clear th are not against change in local gover set-up and that we have an important tribution to make in arriving at the suitable form of administration for all cerned.

"Every commissioner must accept r sibility in his community to further th logue on the vital principle of keeping re producing municipal services distinct fro

# outgoing presidents urge self-analysis in preparation for changes they foresee in municipal organization

pported services. Younger generations in rticular are not always aware of the reasons ind this principle. And the fact that public lity commissions were established in the first ce at the instigation of municipalities has quently been lost sight of down through the rs."

n private life Dr. Wilson breeds beef cattle. commutes the seven miles to Barrie from farm at RR 3, Thornton, every day — ieving, he says "the best of two worlds." □

**"Technical aspects of utility operations must share our attention with such fields as sales, rate structures and employee relations."**

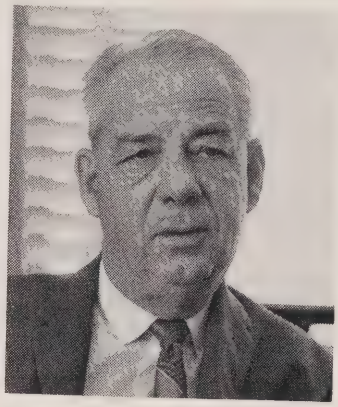
he 43 years he has served as a member bronto Hydro's engineering staff, Ellsworth urbank, newly-elected president of the As- tion of Municipal Electrical Utilities, has the city's peak electrical demand increase than seven-fold to over 710,000 kilo- . Much of the planning and building of stribution system to serve this phenomen- wth has been his responsibility. Toronto e largest municipally-owned system in la.

gineer in charge of distribution construc- ince 1957, and formerly street lighting er, Mr. Burbank joined the Toronto n in 1923. A Toronto native, he is a ate of Queen's University, Kingston.

ive in AMEU affairs throughout his , Mr. Burbank declares of the future: re very definitely into a new era. The s emphasis on engineering is not as heavy as 10 years ago. The technical aspects ty operations must share our attention ch fields as sales, rate structures and ee relations."

estions of regional government and in- g urban annexations throughout the e indicate the changing character of nicipalities, Mr. Burbank states. As well g prepared for the technicalities of municipality to municipality, he says, nging needs of communities must also gnized.

one builds a corner grocery store any e declares. "Today, electrical distribu- stems must be planned for huge city es which themselves have village-size emands. In smaller centres, new hous- mercial centres represent increased



*E. F. Burbank*

loads proportionately just as great."

Within the AMEU, Mr. Burbank suggests that the changing structure of municipalities may eventually necessitate altering the association constitution to retain the truly representative tradition. He believes the need for clear, two-way communication between individual utilities and the parent body of the association, as well as with other branches of the Hydro family, will be no less vital.

Toronto's underground distribution system, which has pioneered several construction techniques in Ontario, is one of several projects which reflect Mr. Burbank's professional ability. Today, some 60 per cent of the city's electrical demand is delivered underground.

Planning and co-ordinating a city-wide pole replacement program — necessitated by prolonged delay in maintenance work as a result of the depression, the war years and the immediate post-war expansion boom — and the re-routing of distribution systems for subway lines and expressways are among other projects for which he can take a large measure of credit.

No friend of the small-boy-with-slingshot, Mr. Burbank, on his appointment as street lighting engineer in 1949, persuaded a major manufacturer to produce a protective light fixture made of plastic. At that time approximately 20,000 street lights were being smashed in Toronto annually. The new fixture, which subsequently won two national plastics awards and cut Toronto's losses to a negligible level, was in production for 10 years. It has since been replaced by new lighting concepts.

Mr. Burbank, a past chairman of the AMEU's committee on overhead construction, has served terms as vice-chairman and chairman of the association's engineering board. He is also active in Canadian Standards Association committee work.

From 1940 to 1946 the new AMEU president served in the Signal Corps of the Canadian Army, rising to the rank of Major. He was among those responsible for selecting personnel for the Mediterranean theatre of the war and later for the forces slated to occupy Germany.

Mr. Burbank's son Charles, who is training as a pilot with Air Canada, was national sky diving champion in 1963. He also gained national headlines by inadvertently parachuting into a nudist colony. His father thinks anyone with this kind of luck is bound to go places.

Two European girls befriended by the Burbank family shortly after their arrival in Canada subsequently asked Mr. Burbank to give them away at their weddings. He considers their families "my adopted grandchildren." □

**"We have to learn to be our own best critics so that the inevitable changes in municipal governmental organization will reflect the improvements we ourselves bring forward."**

Tempting . . . that's how local or regional councils will find power revenues if they ever take over the duties of the municipal Hydro commissioners, said outgoing OMEA president Dr. R. H. Hay. Commenting on recent recommendations to this effect, Dr. Hay told the convention that power costs would be in danger of becoming just another form of taxation.

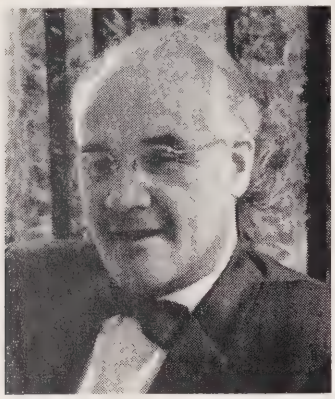
"Every committee of council will be under pressure", he said. "The funds will be mixed, there will be hidden subsidies and the customer will inevitably pay more than he should for the commodity and the service he receives."

To combat this, the speaker warned local Hydro systems that they should be prepared to "fight for 30 years."

But the greatest mistake would be to resist change simply because it is change, he said. The utilities have to "beat the opposition to the punch."

"We have to learn to be our own best critics so that the inevitable changes in municipal governmental organization will reflect the improvements we ourselves bring forward."

Dr. Hay asked: "How does one answer the question which was put to me when I first met the Select Committee on the Municipal and Related Acts in Kingston? I was asked then 'Why couldn't the utility operation be carried on by a committee of council? Why couldn't



*Dr. R. H. Hay*

you find just as dedicated men to serve on such a committee as you now find in your commissions?'

"Are we, as one member of the Select Committee said very emphatically on more than one occasion, just rubber stamps for the general manager?

"We all have to think hard about these questions and search our own consciences for the best possible answers. If we can't do this then the committee is right, we are wrong and are really nothing but barnacles on the municipal ship of state.

"Some of us, if we answered truthfully, would have to say that there are occasions on which we have acted as rubber stamps for an aggressive and competent manager. We all know that the business we run could be run by committees of council and in a few instances are being run, and run well, by such committees. The question is, is this the best way to do it?"

Dr. Hay reaffirmed his faith in the present system of municipal utilities.

He said: "The trust that was undertaken with Ontario Hydro's creation is still best discharged today by the maintenance of complete separation between that body and government, just as it is by the separation at our own municipal level between our business operation and the other phases of municipal government.

"This is the principle on which we stand. This is the reason for our existence and it is only when we forget this that we have difficulty answering those awkward questions."

Dr. Hay criticized university proponents of more centralized municipal administration and those who would transpose the British system of civic government to the Canadian scene.

"As for those who sit in academic ivory towers and teach," he said, "my only comment is that their teachings might be different if they endured the experience of being elected to and serving in public office.

"Under these circumstances, even the brightest theories of municipal government sometimes come a little unstuck at the edges. While it is perfectly true that we pride ourselves on our system of representative democratic government, this country is not England and the degree of centralized control that is possible in England is utterly impossible here."

Dr. Hay mentioned the new power costing procedure recently introduced by Ontario Hydro, saying that it will take the coming year to solve some of the difficulties.

"The important considerations are the cost per kilowatt-hour and the selling price per kilowatt-hour. In my view we are still too inclined to talk in terms of the cost per kilowatt, and this can lead us into paradoxical, confusing and misleading situations.

"On the other hand, we must be very careful about the large industrial customers we take on. If they are so big that their demand is equal to or greater than the basic utility demand and is increasing faster than ours is, we may well find ourselves making less money with them as municipal customers than we would if they weren't. When that happens, our ordinary customers are subsidizing the big industrial customer — which is wrong in principle and unfair to both classes."

Of the new Hydro symbol, he said: "It is bold, it is dynamic, it is descriptive. One cannot ignore it. It arouses strong feelings, one likes it or hates it. To me this is good.

"And if you wonder what the symbol can do for you, think what Canadian National's symbol — its galloping dew worm — has done for it."

Dr. Hay said he recently watched a freight train from a distance of a mile and a half. He could identify every single CN box car. But he could not tell who owned the others.

"This is instant recognition and instant identification. This is what our symbol will do for us."

On pensions, Dr. Hay said the Pension and Insurance Committee had just revised its whole pension plan when the provincial government decided that its own plan should take precedence.

"We had little chance to argue our case," he said. "In fact, it is fair to say that we had none and were presented with a fait accompli and had to make the best of it."

Dr. Hay also mentioned the decision to appoint a full-time secretary-manager f OMEA:

"We have office accommodation at r able cost close to 620 University Avenu separate and distinct from it. And we s way clear, because of the new system of costing, to finance the additional cost of ations out of resources accumulated b municipalities for their mutual benefit.

"Thus we remain our own masters and pletely independent, financially, of any g mental or other group in the province."

Looking to the future, Dr. Hay said he see higher costs "as a growing public a ness of the ugliness of some of the stru we have used in the past, and still use f often, make it necessary for us to put ou tribution circuits underground and to aesthetically acceptable our remaining s structures."

Operating costs would also rise and h an increasingly sharp struggle to meet costs with a greater degree of automatio

"I see also the increasing necessity for and every one of us, whether we come the smallest hamlet or from the largest m pality, more and more to become indiv salesmen and promoters of load, prof electric load. Only in this way can we ho line on retail selling price in the face creased cost."

## "It is imperative tha groups work together only one objective — b service at the least c

The announcement of a special committe "an eye to the future" — was among the lights of the windup address by S Webster, Tillsonburg, outgoing preside the Association of Municipal Electrical ties.

Speaking to a joint OMEA-AMEU sessi the first day of the convention, Mr. W said the new committee would provi executive committee with direction on h reorganize the association should this b desirable to keep abreast of changes s those brought by annexations, amalgam and the introduction of regional governm

While making it clear that matters per to municipal reorganization were a matter and therefore come under OME diction, Mr. Webster offered the comm assistance "to any group considering any

# utilities take united stand against recommendations to abolish hydro commissioners and turn their duties over to councils



*Stanley Webster*

reorganization, as far as the utility oper- is concerned." He suggested the new p's assistance would be "most valuable" to ne involved in administrative changes at nunicipal level.

a cautionary note, Mr. Webster reminded ates that the AMEU is an organization acing all electrical utilities in the province ll as their commercial associates. "It is ore imperative," he said, "that all groups together with only one objective — better e at the least cost.

is can only be accomplished by every- nsidering a question from the standpoint common good — not from a local selfish oint (which he interpreted as being ary, prestige or convenience).

the smaller utilities, he said: "Don't get a that because you are small you can't contribution. Growth in the small utility e slow compared to that of the larger Granted one large utility will build of stations to one of yours and as a mploy specialists.

se people know their particular job ely well, but you in the small utility may much broader knowledge of the whole n. It is only the melding of these two in our committees that will eventually the best solutions to our problems," bster said.

outgoing president said delegates would er that a few years ago the various meter associations were a very active perating for the utilities outside the ion of the AMEU. "It was thought that better job could be done by affiliating AMEU", he said, "and this was accom- and has proven to be very successful. uld like to suggest to the Finance and dministration Board that it organize personnel of our utilities along similar lines. That is, hold district accounting meetings at which the routine business of operating a utility office could be studied and discussed for the benefit of all office personnel. Then, have a province-wide conference at which the more technical and advanced methods of accounting, such as data processing, would be studied. This province-wide conference would replace the present eastern and western conferences held today," Mr. Webster said.

One of the highlights of the 1965 AMEU operation, the president said in review, was the vehicle and construction equipment display at Hydro's A. W. Manby Service Centre in Etobicoke.

About $3,000,000 worth of equipment — the largest display of its kind anywhere in the world—attracted commissioners from all parts of the province. He said the "Made In Canada" theme had been given preferential treatment and that a simlar show is planned for 1967. □

**Strong support for the present system of elected Hydro commissioners is being shown by municipal councils across the province according to the report of the OMEA committee on legislation.**

The role of local Hydro commissions in the streamlined municipal government administrations which are being sought for Ontario was a topic which recurringly dominated proceedings throughout the OMEA's business sessions at the 57th annual meeting.

Directly bearing on the future of Hydro administration, the annual report of the legislation committee drew the closest attention of delegates. And, concerned that a dangerous precedent was being set, lively debate preceded the firing of three salvos at the resolutions sessions strongly protesting a proposal to abolish Hydro commissions in the Ottawa area and have their function performed by a committee appointed by municipal council.

A fourth resolution sought a stronger voice for electrical utilities in determining the best type of administration to serve the changing needs of municipalities.

Outlining activities of the legislation committee in what has been one of its busiest years in the OMEA's history, Chairman Arthur K. Meen, Q.C., North York, reported that municipal councils are increasingly urging that the



*A. K. Meen, Q.C.*

long-established principles of power distribution in the province be retained.

In resolutions to Municipal Affairs Minister J. W. Spooner, Mr. Meen said, more than 50 councils strongly opposed recommendations to dissolve Hydro commissions. These councils shared the OMEA's view that revenue-supported and tax-supported municipal services should be kept separate in their administration, and that Hydro affairs were best administered by officials elected for that purpose.

Tracing the OMEA's representations following the Murray V. Jones Report, which contained the offending recommendation in a study of regional government for the Ottawa area, Mr. Meen said the legislation committee recognized the suggestion as a province-wide threat.

"A brief was filed by the legislation committee with the Minister of Municipal Affairs last December, and although we are optimistic that the Minister will see our viewpoint, we have heard nothing official as yet," he said.

With a further regional government study underway for Peel and Halton counties, west of Toronto, the legislation committee had already presented a brief to the investigating commissioner Thomas J. Plunkett, and is scheduled to appear before him shortly.

Resolutions protesting the contents of the Jones Report termed its Hydro recommendations "a retrograde step", not in the best interest of (power) users . . . and "an encroachment on the rights of municipalities". Prime Minister Robarts and the Municipal Affairs Minister were urged not to abandon the provisions of the Power Commission Act. It was pointed out that Mr. Jones had given no reasons for his recommendations in his report.

Following prolonged discussion on the need for utilities to co-operate in shaping future municipal administrations, a last-minute resolution was introduced by W. E. Wright, Toronto

## resolution calls for a joint study of the effects of power costing methods introduced this year

Township. Passed without dissent it urged OMEA's board of directors and district executives to encourage all Hydro commissions to take a positive approach to studying community needs and to give aggressive leadership "in planning to meet the challenges of today and the concepts of tomorrow".

In another section of the legislation committee's report, Mr. Meen said that following a resolution passed at last year's OMEA convention, a proposed amendment to the Public Utilities Act concerning unpaid accounts is presently being drawn up by the committee.

"This amendment, which we hope will be introduced as a government bill at the present session of the Legislature, would give utilities authority to refrain from supplying power to any customer indebted to another utility elsewhere in the province," he said. □

**Association thinking is crystallized in the resolution sessions and this year power costing methods proved to be the most controversial issue. Other topics ranged from staff training to line relocation.**

The new power costing system introduced at the first of the year, which determines the wholesale rate at which utilities buy power from Ontario Hydro, proved one of the most contentious subjects aired during the sessions on resolutions at the 57th annual meeting of the OMEA.

A prolonged, see-saw debate which revealed wide divergence of opinion on the costing procedure, culminated in a resolution calling for an investigation of the consequences of the new system. It also seeks reconsideration of the controversial question of meeting the cost of frequency standardization.

Some delegates said they were not fully aware of the effects of the costing system when they voted for it at district level, and claimed there was undue haste in introducing it.

Two amendments were incorporated in the resolution before it was passed, and a third was narrowly defeated. The resolution calls upon the power costing committee, augmented by representatives of the AMEU and Ontario Hydro's Comptroller's Division, to consider the consequences of changes in the wholesale cost of power and to receive representations



*Be it resolved . . .*

from municipalities. With several Southern Ontario delegates complaining at additional burden where utilities are paying off frequency standardization charges, the resolution also asks that this aspect be reconsidered. The study committee will report its findings to the OMEA's board of directors.

Earlier, John McMechan, Toronto Hydro, chairman of the OMEA's power costing committee, said in his report to the convention that the new costing system will provide better rate stability and allocate costs more consistently with present-day and anticipated conditions. He said more than 90 per cent of the municipalities had favored the new system, "which will also maintain the ability of our publicly-owned enterprise to meet both short and long-range financial requirements; meet present and future marketing conditions; and ultimately establish more uniformity in rates within the municipalities."

Mr. McMechan added: "It is a fact that strictly on the basis of current cost trends our rates would have increased by about $1.30 a kilowatt in 1966 over 1964, whether the costing system was changed or not."

At the lively resolutions session, delegates from the Nepean and Sarnia utilities were among the most outspoken critics of the new costing system. Harry Hargreaves, Nepean, said that his utility's power bill increased 9.2 per cent, and for many consumers power rates were higher than what they previously paid as rural customers.

"We need co-operative assistance in coping with our problem," he declared, in supporting the idea of a forum to consider the consequences of the new system.

J. T. Barnes, Sarnia, said there appeared to be enough misunderstanding concerning the power costing system to warrant clarification. Avenues which might be reconsidered included allowances for diversity, equity, sales an motion costs, and demand, he thought.

He emphasized that the revised syst frequency standardization charges to m palities in the original 25 cycle system im an additional burden on utilities in So Ontario with expanding industrial pow mand. Mayor H. T. Ross claimed that inc in the cost of power to oil and chemical panies in Sarnia threatened to put them line with their competitors elsewhere.

L. L. Coulter, Ottawa, declared that were probably good reasons for the sit which had arisen in Sarnia. "I strongly any deviation from the arrangements fo ing off the cost of frequency standardiza he said. "These costs must continue to be by those affected."

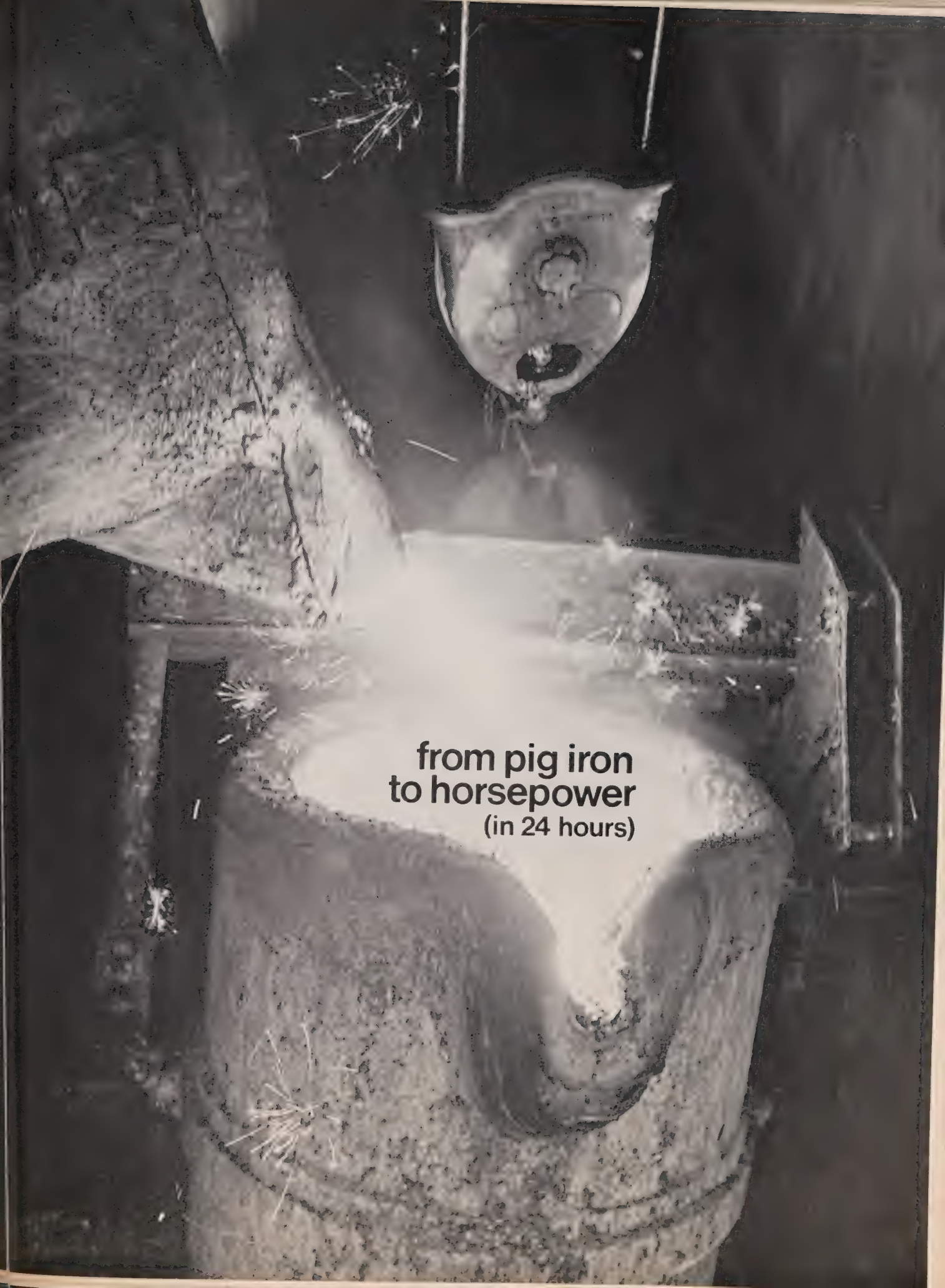
A contrary view was taken by G. R. Preston, who argued that at the time the system was extended throughout the pro other areas received the benefits, incl transmission and generating facilities, initially-established Southern Ontario sy "Southern Ontario started the Hydro s and today is being penalized for it," he cla

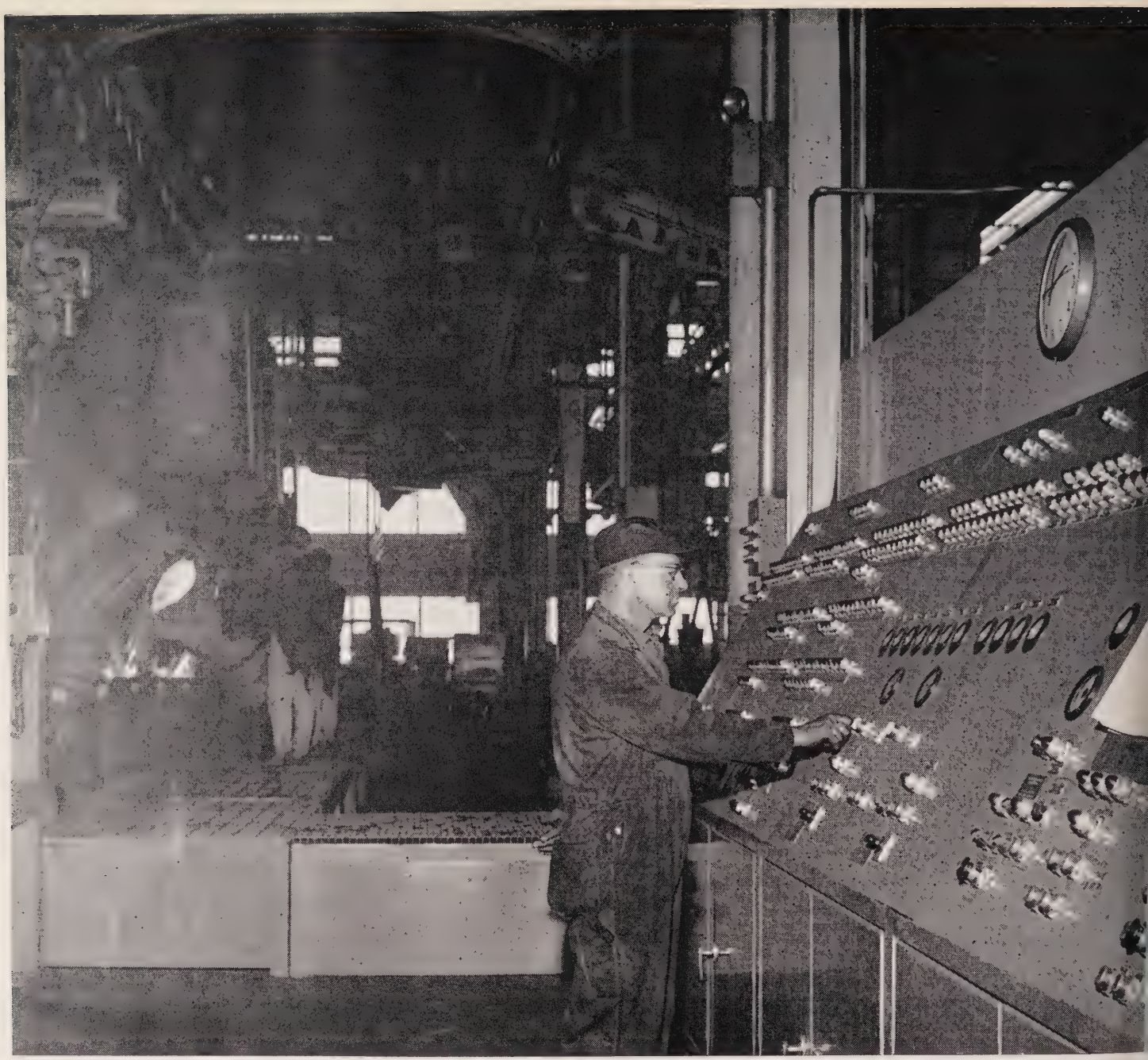
A resolution to set up an entirely new finding committee, with representatives OMEA and AMEU districts, was narrowly down. Several delegates felt that such a larged committee, proposed by Andrew F Burlington, would be too cumbersome an difficult to call together.

Staff training was another topic to r considerable attention at the resolution sions. The meeting decided that the assoc would consider the advisability of establ suitable courses to train personnel in management. A suggestion to introdu apprenticeship training scheme for utilit men was referred to the AMEU and O Hydro.

Cost to utilities of relocating facilities street and highways are altered and wi also drew the close attention of delegate meeting resolved that representations be to the provincial government to ha imbursement extended to include the materials. At present only 50 per cent cost of labor is reimbursed.

The meeting also requested the OMI Ontario Hydro to investigate ways to so problem of overhead transmission lines through subdivisions which have mu underground systems. It was pointed o this situation increasingly occurs in annexed areas of communities.


from pig iron
to horsepower
(in 24 hours)



## electricity is the catalyst in this automotive alchemy

Raise the hood of a new '66 convertible and take a loving peek at that 200-horsepower engine purring on its mountings like a contented tiger.

It's hard to believe that only a few days ago it was a heap of scrap metal and pig iron beside the Welland Canal. But (if you're looking at a General Motors car) it probably was.

For McKinnon Industries, the company's St. Catharines' subsidiary, turns out 1,700 six-cylinder and V-8 engines a day, shipping them to Oshawa for installation. The journey from raw material through the foundry and assembly line to the engine ready for business in the finished car takes less than 24 hours.

Mass production magic, indeed. And like so many modern production miracles, electricity is the catalyst activating the entire process.

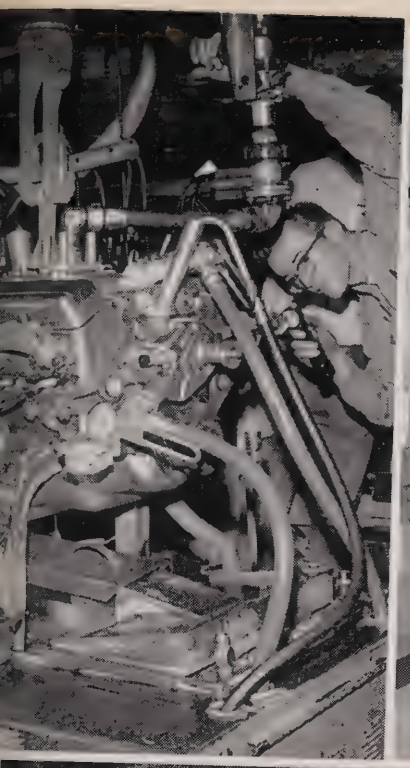
As with every other component of the complex engine manufacturing operation, electrical requirements increase with production growth and that's where St. Catharines PUC recently entered the picture. Not ones to permit a little obstacle like a seaway to interfere with the needs of their customers, the utility recently spent more than $750,000 laying new cables under the Welland canal. The cables will feed 30,000 kilowatts to McKinnons' foundry and engine divisions by the end of this year and they are capable of carrying twice that load.

Without power, the plant would shut down instantly — thousands of machines would fall idle, assembly lines grind to a halt and the multi-decibel din dwindle to a murmur. Only the auxiliary engines would break the silence as they kept cooling water cascading down six giant cupolas, each one holding tons ( ten, white-hot iron simmering at 2,600 F. Without water, the cupolas would c in the heat and flow across the foundry

So power is vital to McKinnons, w expanding to meet the needs of the b automobile industry. The number of em at the company's two St. Catharines has doubled in three years to nearly while the electrical load has increasec same proportion. The yearly wage bill is $60 million, adding greatly to the pr of the Garden City.

The emphasis at McKinnons is on sp efficiency. Any hold-up will soon affec automobile workers at Oshawa.

Shouted Joe Mazzei, foreman on sembly line (he had to shout): "I pick '66 sports coupe from a St. Catharine on the Wednesday evening and check









engine's serial number. It came through
n the night shift Monday.
that time it was shipped to Oshawa,
l in the car and the coupe transported
St. Catharines. That's how fast things
ound here".
gs have moved swiftly at McKinnons
e time Ebenezer Lachlan McKinnon
ted making buggy whips and saddles at
of his store in St. Paul Street, in

e turn of the century the company had
o Ontario Street, where plant 1 is now
and during the First World War added
shells to the orders flooding in for
saddles. Ebenezer McKinnon died in
t not before he had branched into the
of making automotive parts.
al Motors Corporation took over the
in 1929 and the foundry division was opened at plant 2 in 1952. Engine production followed two years later.

An ultra-modern three-storey administration building completed last year at plant 2 is also a heavy electric power consumer. Its facilities include escalators throughout, cheerful, airy offices, high-level illumination and even closed-circuit television so that security men can check staff and visitors from a gatehouse half a mile away.

McKinnons now export to South America, South Africa, Belgium and Germany.

Plant 2 turns out engines and castings; plant 1 makes bearings, sparks plugs, fuel pumps, front and back axles, electrical parts and other accessories. Another factory in Windsor makes automatic and manual transmissions.

Looked at another way, McKinnons make many of the parts on a GM car you never normally see. Which amounts to quite a few. □

by LES DOBSON

*Foundry worker keeps an eye on automatic operation, opposite page, while engine blocks head up the assembly line, above. Completed engine is shown hooked up for trial run. Closed-circuit TV aids security guards at new administration building which includes streamlined restaurant for staff.*

they went under the canal in

# a race against time




*With a flick of a switch, Ontario Hydro Chairman W. Ross Strike sends power flowing to McKinnon Industries over the new cables. With him are E. J. Barbeau, McKinnons' president, left, and J. S. Morrison, chairman, St. Catharines PUC. Top photo shows canal-spanning project underway.*

Installation of 12 power cables under the Welland Canal — the biggest and costliest job ever undertaken by St. Catharines PUC — was really a race against the clock.

The St. Lawrence Seaway Authority started to drain that section of the canal opposite McKinnon Industries for repairs in mid December, giving cable crews two months in which to complete their work.

About 40 men had started to dig a 21-foot wide trench on the west side of the canal in October. Once the waterway was empty, they sloshed around in 18 inches of mud to excavate across the canal bed.

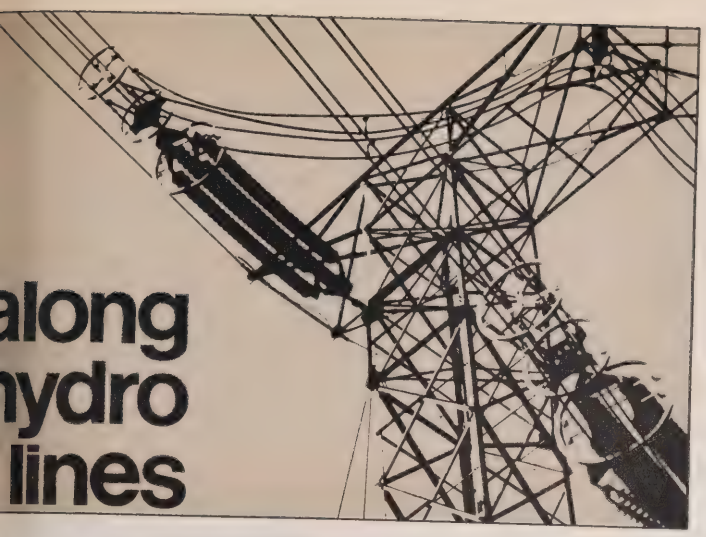
Altogether, they laid six miles of polyethylene-covered, lead-sheathed cable 2,700 feet from a transformer station on Glendale Avenue, under the canal, to a sub-station at McKinnons.

Cables were pulled across the canal through concrete-encased conduits which were later covered with slabs of concrete to protect them from ship's anchors. The conduits were up to 50 feet deep at the canal banks a feet below the canal bed.

Power was formerly brought to the a gine plant by cables lying exposed on th tom of the canal. Necessitated by the g electrical needs of the industry, the new will improve service security and is desi isolate faults rapidly. Should one of th circuits fail, the other three are capa carrying the load.

PUC manager Ray Pfaff and chief e Ken Richards have nothing but praise organizations involved in the venture, in the cable manufacturer and the subcont Ontario Hydro engineers acted as cons

"One of our biggest problems was exc under a 16-inch water main," said M ards. "If that had fractured, it wou washed away the trench and really fo the job. Not only that, it would have sh St. Catharines' major industry in minu




## indsor Manager to Retire

Teckoe Jr., Windsor Utilities Commission general manager for the past ears, has announced he will retire April 1 due to poor health. Engaged ility work for 43 years, he was associated with Niagara Falls Hydro from until 1939, when he joined Tillsonburg PUC as manager. In 1944, he me general manager of Galt PUC and in 1951, joined Windsor as tant general manager to J. Clark Keith. He became general manager in upon Mr. Keith's retirement.

tribute to Mr. Teckoe's work in his community, the Windsor Star said: dsor Utilities have been very well managed. This is due in a very large e to Mr. Keith and Mr. Teckoe. They knew their job, what to do and o do it. They have been strong enough to insist it be done in the way."

Teckoe's successor is Glen Fisher, administrative assistant to the al manager, who also has been co-ordinating the January 1 merger of indsor utilities with Riverside PUC, Sandwich East PUC and Sandwich Hydro. Mr. Fisher joined the utility directly after his graduation in ical engineering at the University of Toronto in 1949 and has held a r of posts. □

## ineering Medal Winners

Smith, Ontario Hydro's chief engineer, was one of three recently d the Engineering Medal of the 22,700-member Association of Pro- al Engineers of Ontario.

ured below are the three recipients, from the left: John MacNaughton, chief engineer, Special Products and Applied Research Division, de nd Aircraft of Canada Limited; Harold Smith; and Dr. J. H. Chapman, chief superintendent, Defence Research Telecommunication Estab- nt in Ottawa.

ward is made to professional members who have made a substantial ution to the advancement of the technical side of engineering in any branches. Only eight have been awarded since 1946. Among the recipients have been Dr. R. L. Hearn and Dr. T. H. Hogg, both former Ontario Hydro chairmen.

Mr. Smith, a native of Lucknow, has been with Ontario Hydro since graduation from Queen's University in 1940. During World War II, he served with the Royal Canadian Navy and was awarded the MBE for his work in radar development.

Associated with Ontario Hydro's nuclear development program from the first, he was co-ordinator of an 11-man team appointed to carry out joint studies with Atomic Energy of Canada Limited on the possibility of generating power from nuclear reactors. Mr. Smith has been Hydro's chief engineer since January, 1965. □



*tribution was substantial.*

## More 40s Than 25s



*She had the field to herself.*

It was ladies' night at the 38th annual Toronto Hydro Quarter Century Club celebrations held recently at the King Edward Hotel. The one and only novice welcomed into the club this year was Mrs. Kathleen McErlean.

However, the males held their own in the 40-year-service ranks as seven men joined the select group. Pictured with Mrs. McErlean are: Top row, left to right: Jack Roe and Charles Taylor; second row: Bosworth Staniland, Vernon Murray, Charles Ward and Thomas Campbell. William White is absent.

A warm round of applause from the audience of 300 was reserved for the grand old man of Toronto Hydro, James Redsell, 93 years old, who has been retired from the post of general foreman of the Station Construction Department since 1938. Also, a youthful Bert Gibbs is breaking a record each time he attends a Quarter Century Club banquet. This is Bert's 52nd year of continuous service with the system.

Among those attending were 51 long-service employees who have contributed 2,172 years of active service and are still on the job. □

## Unity Urged Within Industry

In a recent Winnipeg address, Dr. J. M. Hambley, general manager of Ontario Hydro, appealed for unity within the electrical industry as a contribution to the achievement of Canada's economic goals.

Speaking to about 400 delegates attending a National Electrical Day rally, Dr. Hambley suggested that the initials of the many associations connected with the electrical industry must sound — to the uninitiated — like something from George Bernard Shaw's alphabet.

He mentioned, among others, such groups as the Canadian Electrical Manufacturers' Association, Canadian Electrical Association, Electric Service League and Electric Heating Association.

Dr. Hambley said he "could not help but feel that inefficiency and duplication of effort must inevitably attend the multiplicity of electrical industry associations functioning at both the federal and provincial levels."

As past president of the CEA, Dr. Hambley suggested it would be "more sensible" to bring some of these groups closer into a common fold.

However, Dr. Hambley said, each group could still retain its autonomy

and flexibility. Closer liaison among electrical industry people would mean less duplication of effort and result in a time saving for those who now have to attend extra meetings.

"If amalgamation of existing associations is not the answer, then surely a forum where the responsible heads of the several branches within the industry would meet to discuss the industry's problems and to chart for it a common course, is needed," Dr. Hambley said. □

## They Co-operate on Standards

Few things are as important to the electrical industry as the setting and adoption of proper standards for equipment. And in the preparation of standards, co-ordination of the interests of various segments of the industry is vital.

It was with this concept in mind that, more than six years ago, a committee was formed to provide effective liaison among the Canadian Electrical Association, the Canadian Electrical Manufacturers' Association (CEMA) and the Association of Municipal Electrical Utilities.

The Co-ordinating Committee for Electric Utility Standards has pr effective liaison both among its members, and between them a Canadian Standards Association, since 1960. National in scope, the is made up of ten members from each of the two national bodies an from the Ontario-wide AMEU. CSA is usually represented by R. E. Stopp

Chairman of CCEUS for 1966, a CEA representative, is T. L. Wood Manitoba Hydro. He replaces F. L. G. Askwith of Ottawa Hydro fr AMEU.

Other officers elected for 1966 were K. R. Dunphy of Canadian G Electric, 1st vice-chairman; J. A. Torrance of Etobicoke Hydro, 2n chairman; and I. M. Clark of CEA, secretary.

The committee doesn't write standards. It seeks to ensure that all m bodies are consulted when any of them asks that a standard for equipment be written. In addition to this co-ordinating function, it the progress of standards and promotes their adoption by all segme the industry.

Among the standards for which CCEUS has co-ordinated prep



## OMEA Executive

OMEA officials for new term, back row—W. F. Rannie, Beamsville; A. J. Marshall, Fort Frances; R. C. Johnston, Peterboro; J. R. Phillips, Brockville; J. F. Darby, Espanola; M. J. Brian, Windsor; T. Stevenson, Chesley; G. Klager, Fonthill; G. D. Sills, Seaforth; Dr. V. S. Wilson, Etobicoke. Centre—G. A. Shepherd, Elora; G. R. Cook, Preston; R. G. Campbell, Embro; H. F. Baldwin, Oshawa; J. J. Cross, Huntsville; W. C. Pearson, Strathroy; D. A. Orangeville; D. H. Glass, Aurora; A. K. Meen, North York; E. C. manager-secretary, Toronto. Front—John Wratten, Brantford; J. T. B Sarnia; Dr. R. H. Hay, past president, Kingston; Dr. J. E. Wilson, pre Barrie; Dr. J. D. Fleming, 1st vice-president, Dundas; P. R. Locke, St. T Roy Warwick, Blenheim; E. C. Dash, Sudbury.



## AMEU Executive

Officers of the AMEU, front row left to right—D. K. White, North York; C. W. King, Ridgetown; A. G. Stacey, Guelph, vice-president; E. F. Burbank, Toronto, president; Stan Webster, Tillsonburg, past president; Stewart Holt, Midland; F. L. G. Askwith, Ottawa. Back row—Bela Toth, Fort Frances; I. L. Bradley, Waterloo; H. L. Harris, Sault Ste. Marie; H. E. Brownhill, Falls; H. J. Murphy, Barrie; W. R. Mathieson, Toronto, secretary-m J. F. Anderson, Leamington; J. K. Fee, Kingston; C. V. MacLachlan, In R. S. Coles, Toronto.

ities are those for subway transformers and hydraulically and mechani- operated devices for vehicles.

andards issued in 1965 which the CCEUS is bringing to the attention of ndustry include those covering concrete poles, switchgear assemblies sbestos cement conduit. □

## rket Surveys Urged

ies can make their advertising and sales more effective by engaging a etent firm to conduct a marketing survey, advises W. E. Edwards, man, Sudbury Hydro.

a report to the 57th annual meeting of the OMEA-AMEAU, in Toronto, dwards said: "Once a survey has been done then you know where your ness lies, where your potential market is, where you should spend your tising dollars in greatest strength, and what your customers think of a utility.

is is money wisely spent, and I feel that without this we are not ng on a factual basis but rather are assuming things which are not, in cases, true."

Edwards warned delegates that their survival as an electrical group ded upon presenting a united front to competitors.

y personalities or feelings of animosity must be submerged and every- ust work to a common goal. That goal, I suggest to you, is a unified cal industry." □

## mmissioners' Long Service Awards

ear, awards were made to 21 Hydro commissioners across the prov- recognition of a total of 345 years of public service to the people rio. To commemorate these achievements, W. Ross Strike, chairman rio Hydro, presented special plaques to each of these distinguished eterans with 15 or more years of service.

year, a new feature will be added to the long service presentations. guishing insignia will be presented to those members reaching the mark in Hydro service.

ients not in the photographs include: Jack McMichael (16 years) l; T. J. Moffat (16 years) Listowel; C. J. R. Ballantyne (15 years) sing; George G. MacEwan (16 years) Goderich; Johnson Young (19 ort McNicoll; A. E. Levesque (15 years) Sturgeon Falls; E. G. Tyler s) Acton.

## municipal briefs

**J. E. Shields**, supervisor of the Brockville PUC Sales and Service Department, sends us some interesting figures illustrating the impact of the electric heating load on his utility's revenue. Each year since 1962, revenue from this load has doubled. Eighty-one new houses and 11 apartment blocks with 168 suites were completed in Brockville last year. All the apartments and 39.6 per cent of the homes were electrically heated. The city's total of electrically heated homes, apartment suites and commercial buildings now stands at 383. More than 50 per cent of this growth occurred in 1965.

**Hespeler has passed a motion** making it mandatory for all new subdivisions to have underground electrical service. The new regulation makes the contractor for any subdivision liable for the additional cost of the services.

**George Hammond**, Port Elgin Hydro manager, was lauded by the local press for being instrumental in bringing a new industry to town. Reliance Electric and Engineering of Canada has decided to build a million dollar factory in Port Elgin. In an official announcement, N. J. McCartney, general manager and vice-president of the firm, stated that Mr. Hammond was a large factor in the company's decision to locate in Port Elgin. He could not speak too highly of the co-operation and effort put forth by the local Hydro manager.

**Infra-red electric** heaters or heating pipes imbedded in concrete are two possibilities being considered for heating sidewalks on Dundas Street in London next winter. The street is undergoing a face-lifting. The $200,000 project would keep the sidewalks free of ice and snow and release merchants from the chore of clearing them as required by city bylaw. Cost would be borne by the businessmen over a 20-year period. The scheme hinges on council approval.

**Plans for a garden lighting display** to be held in a Fort William park this summer were discussed at a regular meeting of the Lakehead Electrical Association recently. Last summer the garden lighting display was held at Hillcrest Park in Port Arthur.

**Chatham Hydro commissioners** recently enjoyed their annual tour of substations and other utility installations and improvements. The tours are undertaken at least once a year to keep commissioners up to date on the utility's progress.

**Pembroke's mayor, W. K. Kutschke** and two members of council recently held discussions with Ontario Hydro's first vice-chairman George E. Gathercole on the possibility that this Ottawa Valley town might become a Hydro





*A. Calvert*
*Port McNicoll*
*(19 years)*



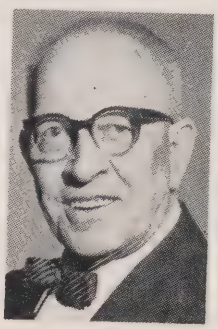
*Lloyd A. Cameron*
*Port McNicoll*
*(18 years)*



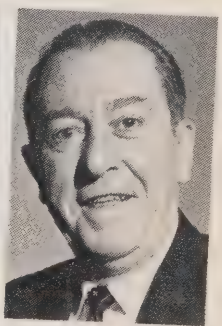
*H. Stanley Graham*
*Newcastle*
*(15 years)*



*Roy T. Hewitt*
*Hagersville*
*(15 years)*



*E. Holden*
*Kapuskasing*
*(15 years)*



*Howard Johnston*
*Mildmay*
*(16 years)*





*George Kennedy*
*Havelock*
*(15 years)*



*C. W. Reesor*
*Markham*
*(19 years)*



*R. E. Rupert*
*Finch*
*(16 years)*



*Fred Taylor*
*Beaverton*
*(15 years)*



*A. T. Warwick*
*Ridgetown*
*(15 years)*



*James E. Wincott*
*Niagara Falls*
*(15 years)*

municipality. The town is supplied by a private company and is considering the purchase of its distribution assets.

**Oakville's brief** to the commission studying regional government for Halton and Peel counties, which has been accepted in principle by Oakville council, recommended creation of a single urban-rural metropolis of 250,000 people, taking in all of Halton county, and parts of Peel, Dufferin, Wentworth and Wellington counties with government by a single municipal council, based on a ward system. A single five-man elected PUC would serve the entire area.

**The capital budgets** of 346 municipal electrical utilities approved by Ontario Hydro in 1965 represented proposed expenditures totalling some $49,500,000.

**Among the projects** in London PUC's capital program for 1966 are a new garage and office building improvements totalling more than $100,000. Street lighting improvements are expected to cost $200,000.

**Nepean Hydro** is pleased with response to their "Light Up Nepean" centennial project. Under the plan, residents are being asked to erect lamp standards on their lawns on a do-it-yourself basis. The commission has been averaging 20 inquiries a day from interested residents.

**Point Edward** in Lambton county beat the gun on its centennial project by opening a new library and fire hall recently. The library, the community's main centennial project, will be officially opened in 1967.

**William Kramer**, secretary-treasurer and superintendent of Mildmay Hydro at his retirement in September last year, was recently honored by the commission with the presentation of a plaque commemorating 50 years of Hydro service in this community near Walkerton. Mr. Kramer joined the Mildmay Electric Company, then a private concern, in 1915, and was superintendent until 1933 when the company was taken over by Ontario Hydro. Mr. Kramer continued in this capacity with the new municipal utility for 10 years. He was both superintendent and secretary-treasurer for 23 years until his retirement. His son, Raymond, has taken over as secretary-treasurer.

**David Pope**, formerly manager of Sandwich West Hydro, will head the newly created customer service department of Windsor Utilities Commission. Riverside and portions of the township of Sandwich East and West became part of Windsor, January 1. The new department will keep contractors and the commission staff informed of changing customer requirements, provide a uniform billing treatment, set up a complaint department and a load promotion program.

Other new Windsor utility appointments include Joseph Abbot, office manager; Bruce Long, billing manager; Bill Strelzynk and Rod Little, line superintendents; George Parr, purchasing supervisor; Harold Madsen, systems manager and Dave MacKenzie, amalgamation co-ordinator.

**Doug Berry**, consumer service supervisor for 15 years in Ontario Hydro's Central Region, has been appointed symbol application officer. A graduate electrical engineer, Mr. Berry will assist Jack Brown, symbol co-ordinator, in implementing the visual identity program throughout the province. □

## Merger in the Making

Ontario Hydro Chairman W. Ross Strike pleaded for greater unity in the electrical industry at the annual meeting of the Electric Service League, held last month in Toronto. He said the industry was now in a position to provide a smoother co-ordinating effort between its various segments.

"We have been talking for years about streamlining the whole industry and it's time somebody began this task. I feel the Hydro family is in the best position to give leadership to this work. We have exhorted everyone to give serious thought to this; therefore we should be prepared to apply ourselves to make it happen," he said.

And the Electric Service League is taking the lead in this direction as manager Harry Foy pointed out in his annual report. Outlining progress in the merger of the League with the Electric Heating Association, he said: "A committee was set up in October to study a method for the merger and a working committee was named to work out the details. This committee consisted of John Torrance, AMEU; W. L. Scott, EHA; G. A. Wellman, Management Services Group, Ontario Hydro; and myself," he reported.

"This committee met on a number of occasions until mid-December when due to the illness of its chairman, John Torrance, an unavoidable delay was



*Leaders in a crucial period.*

experienced. When it became known that Mr. Torrance would be unav for some time, Ray Pfaff of St. Catharines was asked to act on his b

It was announced later that the groundwork for the merger will hav laid by June and that amalgamation will be completed by January 1

Mr. Foy gave credit to the promotion of builders drawings incorp electrical layouts for the 1965 increase in Red Seal Standard of Wiri Medallion awards. "Our staff did 856 drawings last year and countle outs were prepared by Ontario Hydro regional offices and by a large n of municipal utilities," he announced.

He also reported that the Red Seal Standard of Wiring concept ha vigorously promoted with builders of non-electrically heated hous with apartment and row housing builders. Results were indicated figures. Certification of 17,042 dwelling units was achieved in 1965 more than in 1964.

"The percentage of electrically heated homes meeting Medallion r ments in 1965 rose to 36.4 per cent, up 16.8 per cent from the pr year," he noted.

The 1966 executive of the Electric Service League, pictured includes: left to right: R. L. Mooney, Square D Company, past pre D. A. Ramsay, Ontario Hydro, president; I. O. Mather, Ellis Howard L first vice-president; H. A. Luckins, Sarnia Hydro, second vice-pre Harry Foy, manager.

## An Ampere for the Teacher

The importance of electrical aids in education was demonstrated to a mately 13,500 people who attended the Canadian Education Showp Toronto recently. Over 10,000 school administrators and educators the latest in electrical teaching aids exhibited by major manufac Everything from heating and lighting to electrical apparatus which reading, learning languages and mathematics was displayed. Visito ticipated in live demonstrations of educational television.

## New Line De-icing Method

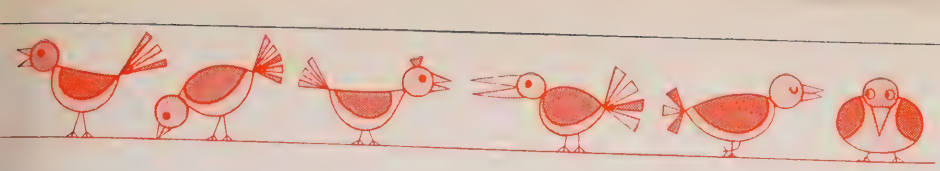
Britain's Central Electricity Board and an English steel firm have dev a self-energizing and fully automatic de-icing system for overhead lines. Claimed to be the first de-icing method to operate with the network under normal load, the system is said to be less expensi elaborate than alternative ice-clearing methods whereby a heavy cu passed through cable after the line has been taken out of service.

## January Energy Production

Primary energy provided by Ontario Hydro in January totalled 4 billion kilowatt-hours, an increase of 10.6 per cent over the sa month a year ago.

Adjusted for seasonal influences, primary energy demand January was 3.89 billion kilowatt-hours, 2.6 per cent more than previous month.

The seasonally adjusted total for January represents 46.71 bil kilowatt-hours at annual rates. This is 335.8 per cent of the en demand in 1949.



# off the wires

New developments in the field of education n be confusing and for the benefit of our older aders four or five years removed from the halls learning we will discuss some of the newer nds and suggest solutions to the more pressing oblems.

First, let's clear up any suspicion that university commodations are, in fact, adequate to look after se who would occupy them. Stuff and nonsense, course. The rumour probably stems from news- per accounts of the ding-dong battles going on ong our academies of higher learning to win dents through reduced entrance requirements. Possibly the man on the street, a rather doltish ow for the most part, interprets this to mean t seats are going begging. In fact, it's just t the electronic age of space travel and com- erized industry is so much simpler than the se and buggy era that less knowledge is re- red to get by.

Some will, of course, view this trend with alarm. Grade XII is sufficient for university entrance ay, they will argue, it may well be Grade X orrow and Grade V sometime in the future. sibly, but consider the benefits. Milk bottles replace mickeys at football games. Bicycles eliminate the student parking problem and ts on the town will no longer interfere with ies.

ore important, perhaps, unproductive extra- cular activities will be honed to the bone. Take series of lectures on birth control sponsored ntly by a Toronto college society. Who would d? And of those who could stay up that late, many would dig doggerel like this dished up e of the sessions. As reported in the Globe Mail, it goes:

e was a young girl from St. Paul
vent to a birth control ball
ought all the devices for fabulous prices
obody asked her at all."

Shades of Hans Christian Andersen!

the Toronto Board of Education has been ing with a weighty problem of its own lately ther or not to splurge on golf equipment in that students be adequately instructed in yal and ancient game. One trustee termed pposed golf program "a part of the changing of education".

I say amen to that one. And it's not much tt from the clubs to the fairway. This could te a problem in the older urban areas but s no reason why all new secondary school uldn't be selected with an eye to potential azards and sand traps.

some of the more parsimonious taxpayers fidget at this point, we can only say "get . Polo is another pastime we think is being over too lightly by school authorities. If cs must be considered, trustees could be sold on the grounds that stable excretia would shave fertilizer costs and improve petunia quality.

However, proletarians may consider golf and polo a bit highflown, particularly for schools in the slum areas, and for them the Ontario Young New Democrats may have the answer. At a recent convention, they recommended high schools provide students with special rooms for smoking and shooting pool to help them "mature into responsible citizens".

Other interesting recommendations put forward at the convention included giving students a hand in setting curriculum standards and selecting teachers. This seems fair enough. After all, who else can decide how best to divide time between the pool hall and lecture room. As for teacher selection — make ours blonde.

Naturally, this program would take some selling at the faculty level but the NDP youth hope to get around this by urging a 50 per cent salary increase for teachers, a year's leave of absence with full pay every five years and more free time and paid help.

Yes indeed. Only one problem here as we see it. Every teacher would then be making more money than the prime minister and with all that time off every student would take up teaching. At the very least we would end up with a somewhat unorthodox economy.

What happened to the three R's? We don't dig you, man. Maybe you mean the three P's — pool, polo and putters.

Before leaving the absorbing world of learning, we would draw your attention to one more item — a plea for a collective bargaining unit for the 58,000 Roman Catholic priests in the United States. To quote the Rev. William DuBay, chaplain of St. John's Hospital in Los Angeles: "We need an American Federation of Priests just as teachers need their American Federation of Teachers — because priests, like teachers, are employees."

True, the proposal leaves a lot of questions unanswered. For instance, what affiliation would be most appropriate? And should compulsory arbitration be considered as in the case of essential services? Most intriguing of all, who would sit over these men of God as final arbitrator?

■ We can't let March go by without some reference to the Red Cross and its annual appeal for assistance. Why the Red Cross when hundreds of other worthy charitable and humanitarian groups have their arms outstretched for the support they must solicit?

One big reason, in our opinion, is the way this society cuts through red tape and the barriers of race, politics and religion to mitigate suffering wherever it may exist. By keeping the humanitarian principles of the Red Cross alive, we help to preserve human dignity and promote peaceful coexistence.

And this is one appeal where the man with a lean pocketbook can still enjoy the good feeling that comes with service. Of the work performed by the Canadian Red Cross, 90 per cent is voluntary.

If you have neither the time nor money to assist, you can still toddle down to the nearest clinic and make the most precious of all donations — blood.

So long as we have men and women working voluntarily and without recompense to help the other fellow — so long can we look to the future with hope.

■ Conventions continue to be regarded as fair targets for public brickbats, probably because they are still equated with the old image of bleary-eyed delegates snoring in harmony with the stentorian tones of the dinner speaker — coming alive only in time to catch the late girlie show down at the nearest watering place.

Like the whole tempo of business, conventions have changed. As one who has worn down his quota of pencils covering the proceedings of groups ranging from lumber wholesalers to shoe manufacturers, we can vouch for that.

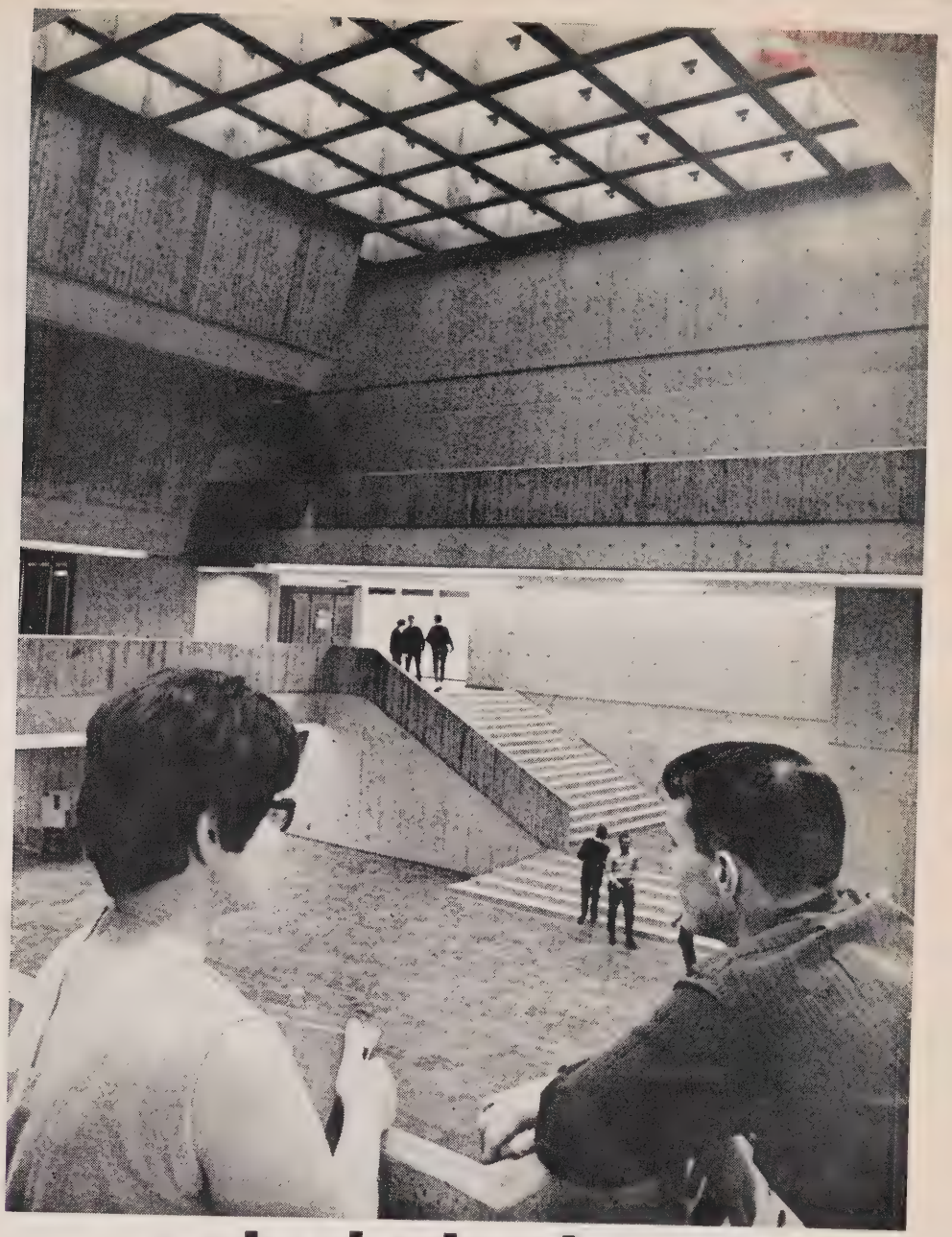
A case in point is the recent joint annual meeting of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities. Convention-goers of yore would blanche at the routine.

More than 800 clear-eyed delegates were on hand for an 8 a.m. breakfast. It was standing room only at the arduous sessions on resolutions and shop-talk prevailed even during the social interludes.

Aside from the business agenda, a good case could be made for get-togethers like these solely for their value as a medium for the exchange of ideas. How else can the fellow from Apple Hill get to know of the better way of doing things discovered by the people from Smiths Falls? And if there is strength in unity, how can togetherness be achieved by remote control?

Perhaps some conventions still deserve to be tarred with the same brush wielded with some justification many years ago but we suspect they are very much in the minority. In the case of the Hydro men, their customers can rest easy. Money spent in this fashion will show up in the long run through the medium of low rates and improved service. □

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# ontario hydro news

## april/1966

## metropolitan ivy league

the vines will come later

## top level hydro changes

after a line change the team remains strong

## four-barrelled lunacy

our cars have one nut too many

ontario hydro news
april / 66

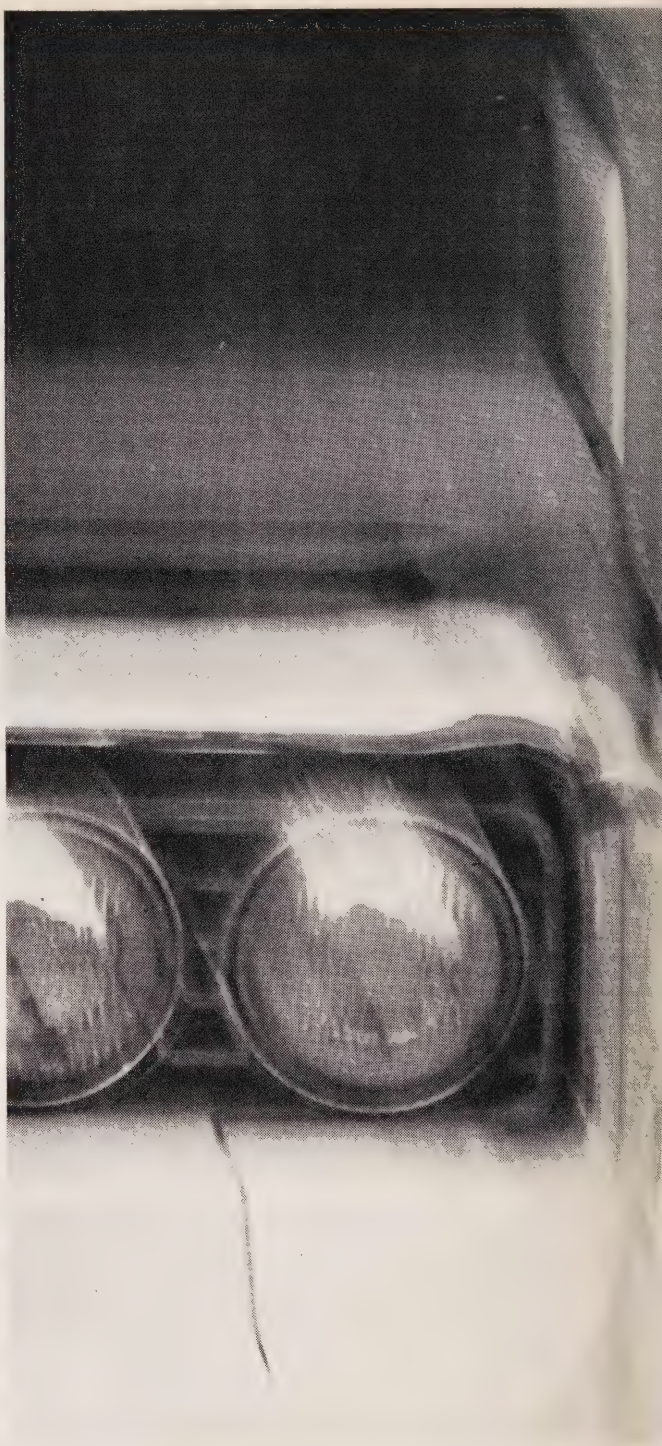
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**Eight points to safer driving.** Canada's recently released traffic acc statistics for 1965 lend emphasis to Dr. D. K. Grant's remarks on attitude in this month's issue. Here are eight points he believes would to safer motoring. Please turn to page five for a closer look at "th behind the wheel."

1. Teach your child "driver courtesy" at an early age.
2. Let parents and older family members set the safe driving example.
3. Encourage driver education programs in secondary school curriculur
4. Ensure that driver courtesy is part of such high school driving pro as well as skills, techniques and traffic laws.
5. Raise the minimum driving age to a more mature eighteen.
6. Let car manufacturers emphasize safety features rather than style.
7. Gear safety campaigns to strike at the deeper emotions of the mo
8. Subject gross offenders to physical and mental tests to rid the ro personalities who do not belong behind the wheel.

# a tale of two churches

by PETER MAITLAND

*"Dedicated in affectionate tribute to the congregations of two pioneer churches who worshipped side by side on this hallowed ground..."*

Flanking the crumbling steps which led up to the churches, two maple trees stand. Everything else has changed.

Gone are the two small stone churches which overlooked the Ottawa River only a few hundred yards from the boundary between Ontario and Quebec. Stilled are the cascading rapids of Carillon, once a formidable barrier to land-seeking pioneers ascending the river.

The creak of harness leather, the clatter of buggy wheels, the flirtatious laughter preceding a moonlight ride home after evening vespers, live only in the memories of the surviving members of the congregation.

Hard by the site are two memorial markers containing the date stones of the churches—Pointe Fortune Methodist Church 1869—St. Columba Presbyterian Church 1874. A plaque in English and French suspended between the concrete markers, symbolizes the close connection of the two congregations.

To the north, straddling the historic Ottawa River, rise the sharp, functional lines of Hydro-Quebec's Carillon power station, humming out electric power for Metropolitan Montreal 60 miles to the east.

When the dam builders came to Carillon in 1960, membership of the Pointe Fortune United Church, which by then embraced both congregations, had dwindled to less than a dozen families. The character of the district had changed; services were held in the small stone church only once a month.

Flooding from the power development would further affect the pattern of population and the congregation requested Ontario Hydro, which acted as agent for Hydro Quebec in land acquisition, to purchase the property. Thirteen persons attended the final business meeting of the congregation which voted to amalgamate with Hawkesbury United Church. Minutes of the last meeting list Barclay, Boa, Cole, Smith, MacLaughlin, Henderson, Scanlon — family names with roots deep in the soil of the lower Ottawa Valley.

The final Sunday service was held at the old church September 25, 1960, the same year the congregation marked its 90th anniversary. But the histories of the Presbyterian and Methodist congregations of Pointe Fortune go back much farther, and are tied closely to the early days of settlement on the eastern boundary of Ontario.

After the American Revolution, United Empire Loyalists settled along the St. Lawrence and in Ontario's eastern townships. Few dared the Ottawa River's raging rapids, beginning at Pointe Fortune, which in 1791 marked the boundary between the new colonies of Upper and Lower Canada.

In the early 1800s, Pointe Fortune became the stopping place for settlers from New England and Britain who climbed the Ottawa in great bateaux, then tramped by trail along both sides of the river to the head of the Long Sault Rapids.

During these early days of settlement by English, Scotch, Irish, French, and Americans, the American Methodist Church was a strong religious force in the area. Its itinerant missionaries, known as circuit riders, brought the gospel to pioneers carving homes from the virgin forest.

To withstand the physical hazards of primitive travel as well as the rough temperament



of the pioneer, the circuit rider was usually a young, adventurous, and sturdy man of God. One wrote about his "romantic crossing" of the St. Lawrence River in 1811 in this way:

"The Indians lashed three canoes together and put our horses in them . . . their fore feet in one canoe, their hind feet in another. It was a novel voyage: three passengers, three horses, and four Indians. We were a long time crossing and did not reach Cornwall until late in the evening. The Indians claimed an additional dollar each, which we cheerfully paid."

The pioneers, preoccupied with the challenge of creating a life for themselves and their families in the wilderness, were not always an enthusiastic congregation.

"Eighteen miles on the front and as far back as I can win" was the way a Presbyterian minister described his pastoral charge along the lower Ottawa.

With time and labor, however, life became easier and there was "returning religious prosperity" in the words of a church publication. This was reflected when the Pointe Fortune Methodist congregation, founded some two decades earlier, completed its "beautiful little stone church of Norman Gothic architecture", in 1869, at the then substantial cost of $1,600.

"Our church in Pointe Fortune was opened for the worship of God on the 31st of October, 1869. Attendance was large . . . esp
at the evening service when 200 pers
tended to hear the Word preached. The v
was good, the roads were bad, and a fe
a distance were present, so that the co
tion were an indication of our prospe
this place," reported a contemporary ac

For the next few years, the local
terians used the Methodist church on
afternoons. According to one accou
church was inadvertently locked one
when the Presbyterians arrived to ho
service. The incident grew into a maj
understanding and the Presbyterians
the dispute by building their own place



*Tablet inscribed in English and French spans memorial markers commemorating historic Ottawa Valley churches — Pointe Fortune Methodist (left) and St. Columba Presbyterian. Rev. Joseph Lynn, who conducted the dedication ceremony, is shown with Mrs. William Usher the wife of a former minister.*



, St. Columba, a few hundred feet from Methodists.

he two congregations, composed largely of lish and Scotch, maintained a peculiar mix- of separateness and togetherness. They ed a large, frame drive-shed at the rear of churches, but one long-term resident re- stories of a high boundary fence which erected after the second church was built. nother story tells of a Sunday when the hodists were singing the hymn "Will There ny Stars in My Crown?" From the Presby- n church across the way floated a line from her hymn "No, not one!"

lthough the churches kept separate Ladies' groups, the Sunday schools were combined, and many went to the Presbyterian service in the evening and the Methodist in the morning. For courting couples, the time after vespers was an opportunity for a buggy ride.

With the formation of the United Church of Canada in 1925, the two churches became one, forming the new parish of Pointe Fortune United Church. St. Columba was used as the church hall.

By 1948, services were held monthly, and the beginning of construction for the power project twelve years later only hastened a development already well underway.

But the two churches of Pointe Fortune were not forgotten.

Last summer, a memorial erected by Ontario Hydro in co-operation with Hawkesbury United Church, and with the active encouragement of the largely French-speaking, Roman Catholic council of East Hawkesbury Township, was completed. The dedication, conducted by Rev. Joseph Lynn and Rev. Adam Thompson of Hawkesbury, was attended by a large gathering.

Today, the memorial stands in a landscaped area, symbolizing an era and a way of life deeply woven into the fabric of the Canadian nation. Only the maples will remain to judge the colorful past against a promising future. □


one nut too many
Disturbed by the fearful slaughter on Canadian roads each year, Dr. D. K. Grant Ontario Hydro's medical director had some interesting observations to make on driver attitudes at a recent meeting of the Hepcoe credit union. He thinks we should tighten up on the nut behind the wheel.

explaining his choice of subjects, Dr. Grant
s it has become clear in recent years that
medical profession must provide some
dership in the campaign for a reduction in
terrible holocaust on Canadian streets and
hways. Formerly content to pick up the
ces and care for the wounded in these acci-
its, he says, physicians are now waging a
re positive secondary campaign of preven-
n.

Acknowledging that better laws, tighter en-
cement, improved roads, and safer vehicles
e a roll to play in reducing the automobile
, he says the basic problem is emotional or
chological on the part of the driver.

The prevention of death and disability due
utomobile accidents can be achieved only
nan can be persuaded to alter some of his
p-rooted feelings, needs and habits," Dr.
nt believes.

ut he points out that it will be extremely
cult to persuade a young man that the sac-
e of psychological and social satisfactions
ecessary to avoid killing his fellow man.
fety mottoes are meaningless to a young
n who does not really believe he is ever
g to die. No young person can really en-
n death. Likewise, no driver will ever
ve he is likely to have a serious accident."
r. Grant substantiates his claim by pointing
hat automobile seat belts have never been
ly accepted because people refuse to admit
ossibility of an accident. Yet, if seat belts
worn faithfully by the Canadian motoring
ic, the annual fatality rate would be les-
l by 25 per cent, or more than 1,000 lives.

he automobile today is a badge of prestige
a symbol of power as well as a means of
portation," he says. "Most men purchase
powerful car to give themselves a sense
tus and superiority. And the automobile
facturers conveniently capitalize on a
s need to ventilate basic emotions by
g violent names to their cars.

oday's male often works more or less
rmously at a more or less frustrating job
an unappreciative boss in a more or less
rigid and impersonal organization," he points out. "Man is bound by convention, authority and regulations in all his life dealings. It seems that the only time he can really feel independent and master of his own fate is when he slides behind the wheel of his 350 horsepower, push-button, super-torque propelled four barrel-carburetored monster.

"Rushing about like a medieval knight jousting in a tourney, he transforms," says Dr. Grant. "He is no longer a small insignificant cog in the vast and complex machinery of the social system; he is now monarch of the road."

His pent-up feelings such as hostility, outrage and aggression bottled up in his daily life are transferred the moment he steps on the gas. In fantasy he exercises power over these feelings and transfers them to other motorists and pedestrians who get in the way. "When normal, he is probably a nice fellow, but behind the steering wheel he changes from polite Dr. Jekyll into wild-eyed Mr. Hyde," the medical director says.

Dr. Grant explains that young men especially use cars to demonstrate their independence and that this showmanship and lack of inhibitions is aggravated by a few alcoholic drinks. "When the show-off attitude and loss of consideration for others is combined with loss of judgement and co-ordination and spiced with over-confidence from alcohol, the car and its irrational driver becomes a lethal monster."

Estimates indicate that at least one-third and possibly one-half of all traffic fatalities are the direct result of drinking and driving. And surprisingly enough, one-fourth of all pedestrians killed on streets and highways have been drinking.

In deep contrast to the frustrated but confident male driver, the doctor points out, is the timid, less proficient woman at the wheel who has an over-all driving record approximately two-and-one-half times better than her male counterpart.

"The fact that women, who are inferior drivers in a technical sense, have a superior safety record is a hard pill for men to swallow. But the answer is simple — women care what happens to them and their families on the road. Lacking confidence in their driving ability and car sense, they do not take chances to show off. And most important, they do not use the automobile as an outlet for their feelings of aggression. They have no desire to exhibit their prowess and devil-may-care attitude to the world," says Dr. Grant.

But despite the ladies' concern for safe driving habits, Dr. Grant deplores the overall public apathy and seeming immunity to safety slogans, campaigns, threats and warnings. "The public accepts traffic deaths as a natural phenomenon, like the rising and setting of the sun. In 1965 there were 4,792 traffic deaths in Canada. There was very little fuss about these as the individual tragedies were diluted. Yet if a town like Markham was wiped out it would be a national catastrophe."

A long-term preventative program is urgently required to reduce some of the human factors responsible for traffic accidents, Dr. Grant suggests. And he believes that a gauge used by the advertising industry might help.

"Motivational research has become an important tool in the advertising industry to find out why people buy what they do, what deeply influences their decisions and how these decisions can be altered. The same sort of motivational research is desperately needed in the field of traffic safety so that motorists may be remotivated to behave in a less deadly fashion on the road.

"However, we must remember there is no single-pronged attack on this complex problem of traffic accidents that can be effective by itself. I firmly believe, however, that the emotional or psychological factors influencing drivers have been woefully neglected and should be studied, understood and remedied," he says.

"Like the prevention of war, the prevention of traffic fatalities calls for a combination of our highest mental, moral, mechanical and civic abilities. People like you and me can help by tightening up that nut that holds the wheel."

# new hand at the helm

## George E. Gathercole Becomes Chairman

Confident in his team and armed with a wide knowledge of Hydro and the economic requirements of the province, George E. Gathercole, 56, takes over the helm at one of the world's largest electric utilities.

As chairman of Ontario Hydro he will apply the same basic principles of leadership which have served him so well in football, hockey and at the conference table. He will keep fully informed himself and he will not hesitate to pass the ball to the specialists.

A onetime well-known athlete who rose from the position of Assistant Provincial Statistician at Queen's Park to become Ontario's first Provincial Economist and first Deputy Minister of the Department of Economics, Mr. Gathercole has been closely identified with Ontario's economic planning throughout the phenomenal growth period since World War II. He has directed activities ranging from studies of hospital insurance and portable pensions to the economic analysis of population growth, school and university enrolment, capital formation, industrial production, employment and taxation. Since 1961 he has been Hydro's First Vice-Chairman.

Widely acclaimed for his ability to translate economic theory into constructive action, Mr. Gathercole defines Hydro's greatest challenge in clear-cut terms.

"Hydro's current expansion program, which will see more than $1 billion spent on capital construction between now and 1970, is without precedent. In bringing this program to completion, one of the paramount objectives of us all will be to continue to ensure that new generating units come on stream when their capacity is needed. To do this in the face of many pressures at the most economic cost will not be easy."

Mr. Gathercole predicts that the sustained growth of Ontario during the past five years will continue in the future. And the resulting pressures on manufacturers and suppliers — also faced with a shortage of many skills — he sees as acute.

"Inevitably, capital expansion in these circumstances means rising salaries, wages and costs of materials and equipment. But in matching generating capacity to growth in power demands Hydro has a well-earned reputation for proficiency — a reputation built up by men and women who have devoted their talents to making Hydro a success. As one of the key factors in Ontario's growth and development, Hydro has not only facilitated expansion, but broadened the market. It will continue to provide reliable service at reasonable cost in the future.

"With encouraging forecasts by nuclear engineers I am confident that in coming years any increases in power rates will be relatively moderate and quite within the budgets of both industry and the people of Ontario."

With some reluctance Mr. Gathercole intends to "ease out" from much of the committee work in which he is active, in order to devote his full attention to Hydro. As well as being president of the Canadian Club of Toronto he is a member of Ontario's Advisory Committee on University Affairs, the Ontario Economic Council, the Ontario Advisory Committee on Confederation, vice-chairman of Sheridan Park Research Corporation and a member of the board of directors of the Royal Botanical Gardens, Hamilton.

"These activities have enabled me to feel the pulse of many areas of the province", he says. "But to fulfill the full-time demands of the chairmanship will obviously leave me little time for other interests."

Born in Hamilton in 1909, Mr. Gathercole entered the automotive parts business on leaving school. Frequent contact with university-trained engineers convinced him of the value of higher education and he attended night school to gain credits for university entrance. He played football for the Hamilton Tigers in the Ontario Rugby Football Union and for the "Big Four" Tiger team in 1930. On the latter, he says, he was the "lowliest substitute".

The following year he enrolled in the political science course at McMaster University where he captained both the football and hockey teams. Lack of jobs and lack of m for further schooling confronted him graduation. Proficiency at hockey provid answer.

With hockey becoming a popular spe sport in Britain and promoters huntin Canadian talent, Mr. Gathercole scrap gether the trans-Atlantic fare, enrolled London School of Economics and financ tuition and other expenses playing hocke baseball. He also edited a hockey publica

On his return to Canada in 1937, he the research staff which compiled On submissions to a Royal Commission o minion-Provincial Relations. Thus bega long experience in federal-provincial rela Mr. Gathercole has been a regular mem Ontario delegations to Ottawa and has att every Federal-Provincial Prime Min Conference since 1945.

Late in 1939 Mr. Gathercole joined O Hydro as economic executive assistant. pleting war service as a navy sub-lieuten Operations and Intelligence, he became th practising economist as such to be emp by the Province.

Of Mr. Gathercole's career in gover service, former Premier Leslie Frost once mented: "He was able to see a problem entirety, provide all the facts concernin problem and come up with the right an He's an outgoing man of tact and charm he's nobody's patsy. When he is convince a certain line of action is right, he sticks guns."

Mr. Gathercole was for many years a ber of Ontario's Budget Committee. H served as chairman of the Finance Com of the Supreme Court of Ontario on the agement, Control and Investment of and as chairman of the Financial Supe Committee to the Public Trustee of Ont

Among observations expressed by th chairman in an interview with Hydro were his views on teamwork:

"It is essential that everyone associate Hydro feels a member of the team," h "Maintaining the esprit de corps, which a big factor in our strength, becomes i ingly difficult as we grow in size. I in work hard at this."

On regional government he had this t

*Mr. and Mrs. George Gathercole with daughter, Georgia. A second daughter, Lynn, is at the University of Western Ontario.*



Reorganization of municipal administration
s evitable. For years the advantages of plan-
ni; and organizing services over a broader
ır. have been discernible. But in any re-
or nized forms of municipal administration
ve must see that hydro-electric service at the
mr icipal level continues under the commis-
ic system. Experience has shown this form
of dministration to be sound. Local Hydro
o missions must continue to operate as busi-
es, which are not financed from taxation, and are capable of adjusting their methods and charges for energy in accordance with the dictates of the market-place."

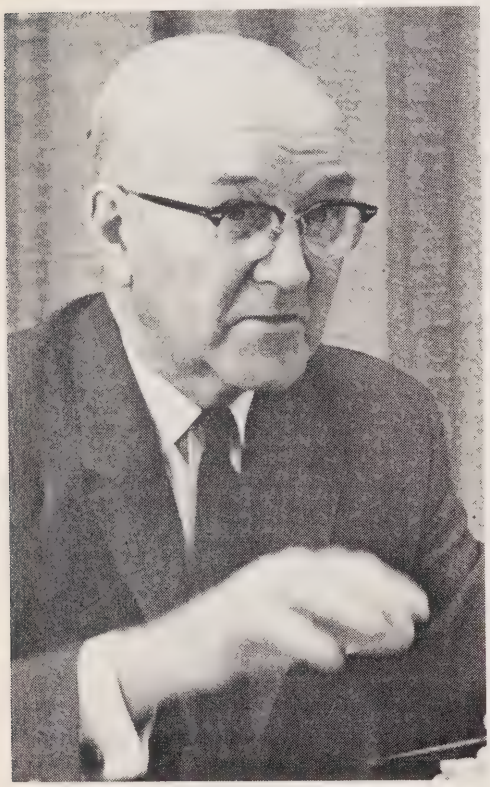
While believing in the preservation of these traditions, he maintains that if municipal services can be made more efficient, effective and economic by organization on a broader base, then neither Ontario Hydro nor the electrical utilities would wish to oppose such adjustments.

Mr. Gathercole, who lives in Toronto Township, finds relaxation on the golf course and curling rink. He has two daughters, the eldest in her second year in Honors Economics at the University of Western Ontario.

Perhaps these comments by the Toronto Telegram are typical of press reaction to Mr. Gathercole's appointment: "The great organization that is Ontario Hydro has been developed by wise, far-sighted leadership. It will continue to have it under the knowledgeable guidance of Mr. Gathercole." □

# his service broke all records

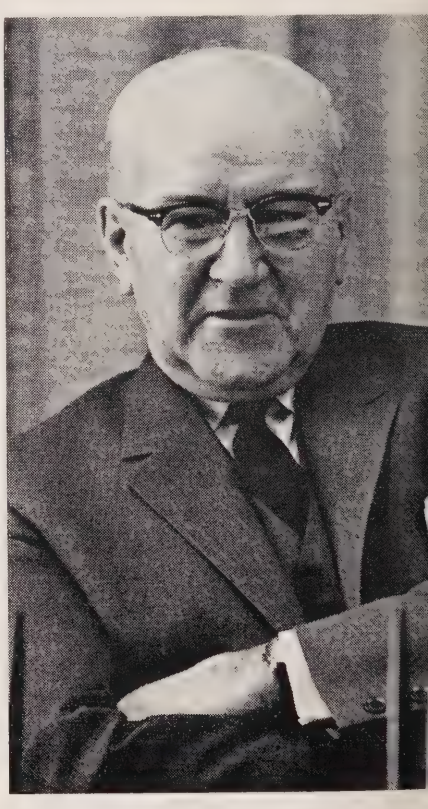
*. . . co-operation is both our strength and our weakness*



*. . . I think our record through the years has been exceptionally good*



*. . . the highlight for me has been th cross-section of people I ha*



## *W. Ross Strike Steps Down*

Thirty-four years ago a tall, affable man joined the newly-formed Public Utilities Commission in Bowmanville. He had taken an active role in the campaign to set up the utility and, in the recent elections, had been elected mayor of the town. In his capacity as mayor he took his seat on the Bowmanville commission.

Thus W. Ross Strike, Q.C., who stepped down March 31 as 9th Chairman of Ontario Hydro, launched a long and distinguished career of public service.

Announcing Mr. Strike's retirement, Prime Minister John Robarts said:

"Mr. Strike has rendered invaluable service . . . through a period of great expansion in the field of municipal and provincial hydro-electric systems. The people of Ontario owe him a great debt of gratitude for the accomplishments and achievements of Hydro in his long years of association with the commission."

Mr. Strike has the distinction of having served longer on the Ontario Hydro Commission than any other person. He enjoys the unique reputation of having outlasted four chairmen and six other commissioners.

Over the years he has won the loyalty and affection of a great number of friends around the province, particularly through his long affiliation with the Ontario Municipal Electric Association of which he is honorary president. It's an understatement to say that he will be missed.

Known to many as Mr. Hydro — and to multitudes as Ross — Mr. Strike has been a soldier, athlete, lawyer and a top executive with a small-town background. After 22 years with the Commission and nearly five years as chairman, he relaxed at his desk recently and talked about Hydro and his retirement.

Mr. Strike believes co-operation is the of the success of the Hydro enterprise.

"I think our record through the year utility has been exceptionally good in k pace with and developing the economic g of Ontario and in keeping abreast of ou tomers' needs so that we could give the best possible service. We have a splendi to work from.

"But we must never forget that our original concept was based upon th operation of a great many people. Co-op is a delicate plant that not only has to b sistently nourished but also deeply cher

"Whether we sink or swim depends c co-operation," he said. "Co-operation i our strength and our weakness.

"We must do everything possible to in our own co-operation but we have to leading part in getting the whole el industry to work as closely together as p to get the best results for our customer

Mr. Strike's association with Hydr back to his early years with Bowmanvi

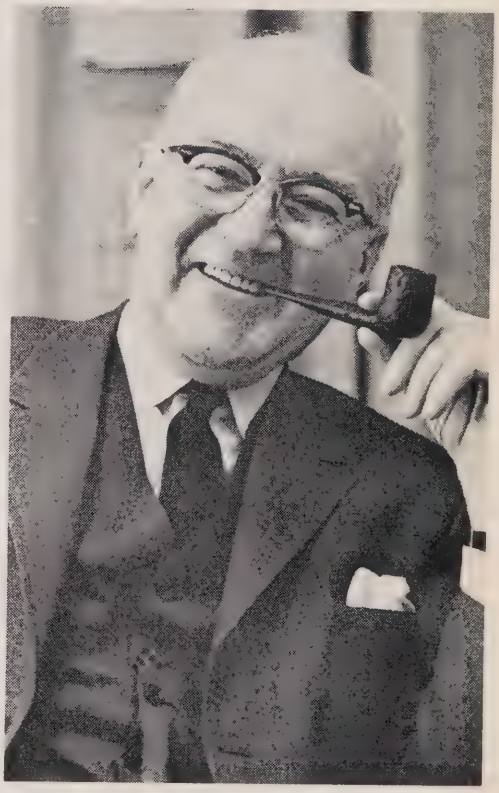
*. . . I've said in a number of speeches how responsible and mature the OMEA has become*



*. . . they may hear from me if they start to slip . . . I'll come back and haunt them*



*. . . I expect I will be No. 1 houseboy and No. 2 gardener."*



which he served from 1932 to May, 1961.
n 1935 he was elected president of the
tern Ontario Municipal Electric Associa-
, and was president of the parent body, the
ario Municipal Electric Association, in
4 and 1945.

While serving as president of the OMEA
Strike was appointed a commissioner of
ario Hydro in June, 1944. In October,
5, he was named first vice-chairman, and
une 1, 1961, he succeeded James S. Dun-
as chairman.

r. Strike's career with Hydro thus spans
of the most eventful periods in its history.
f these years," said Mr. Strike, "the high-
for me has been the large cross-section
eople I have met. They have been my
est incentive. I have worked hard to try
keep pace with them. You can't help but
npressed with the high calibre of people
ydro and the municipal utilities."

ce 1944 he has seen the number of cus-
rs served by Hydro in Ontario rise 2½
to 2,150,000 and a fourfold increase in power demands and resources. The number of municipalities served by Hydro has increased from 302 to 358.

Mr. Strike played a leading role in Hydro's rapid post-war expansion, frequency standardization, major Niagara and St. Lawrence developments and the increasing emphasis on thermal-electric power, both coal-fired and nuclear.

Aside from physical growth, Mr. Strike has witnessed the amalgamations of various electrical systems with the co-operation of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities.

"I've said in a number of speeches how responsible and mature the OMEA has become in developing our organization for the benefit of the whole province," he said.

He paid tribute to the AMEU in keeping step with improvements and developments in low-voltage distribution over the years.

Discussing co-operation between Ontario Hydro and the municipal utilities, he said: "I think it's pretty remarkable. We have been able to right dress and stay in line without too much delay."

Mr. Strike says he will continue to take a strong interest in OMEA-AMEU activities, particularly load-building which he has strongly promoted to meet competition with other forms of energy.

"They may hear from me if they start to slip," he said. "I'll come back to haunt them."

As for retirement plans, he says, "my wife has done most of the thinking. I expect I will be No. 1 houseboy and No. 2 gardener. My son (who continues his father's former law practice in Bowmanville) thinks I will chase a few ambulances but I will not do any more than I have to."

Spry and athletic at 70, Mr. Strike plans to keep on curling and golfing. Of his golf game he says, "I don't get over 100 very often but if I get in the 80's I feel I am a very wonderful fellow."

Will he run again for Bowmanville PUC where he started out in 1932?

"Not if I can help it," he chuckles. □

# other commission changes

## *D. P. Cliff is 1st Vice-Chairman*

Among the assets Ontario Hydro Commissioner D. P. (Bud) Cliff brings to his new post as he steps up to the office of first vice-chairman is the experience gained in almost 30 years of uninterrupted public service. (See Hydro News, December, 1965)

His close association with the Ontario Municipal Electric Association, of which he was secretary-treasurer for 13 years and a past president, provides him with a full appreciation of municipal Hydro problems and a deep insight into the unique organization through which Hydro distributes its power. He has been an Ontario Hydro commissioner since 1956.

Mr. Cliff first entered public life in 1937 as a member of the Dundas Town Council. Wentworth County councillor and warden in subsequent years, he became a member of Dundas Public Utilities Commission in 1945, after his election as mayor.

He was chairman of Dundas PUC for four years and president of District 5 OMEA in 1949. Following his 1950-51 term as president of the parent association, he became OMEA secretary-treasurer in 1952. He only relinquished this post with the recent appointment of a full-time association sercetary-manager.

In addition to his Hydro work, Mr. Cliff is vice-president and sales manager of Dominion Lightning Rod Company — a business which has been in the family for three generations. He has a wide range of community interests and was honored in 1960 by the Dundas Chamber of Commerce for his work in a variety of fields. In naming him Citizen of the Year, the Chamber made particular mention of his work in organizing the Dundas Historical Society and the Dundas Recreation Commission.

Mr. Cliff's views on Hydro in an era of keen competition for the energy market were perhaps best expressed at a special banquet in his honour at the 57th annual meeting of the OMEA, in March.

"Competition was really a blessing in disguise," he said, "although many of us didn't see it in the proper light at that time. In fact, I think competition is the greatest thing that's ever happened to the Hydro organization."

On the same occasion, when he was relinguishing the role of secretary-treasurer, he spoke of possible revisions in local government which might occur "in these times of rapid change".

"It is up to us to show that the present municipal Hydro organization can best handle Hydro affairs whatever form of local government evolves. We must continue to speak as one voice to preserve and expand our partnership in supplying the electrical needs of this province."

Mr. Cliff lives in Dundas and has two sons and two daughters. His son Don works with Hydro in the Consumer Service section, Western Region. □

## *Ian F. McRae joins the Commission*

The appointment of Ian F. McRae, P.Eng., former chairman of the board of Canadian General Electric Company Limited, to the Ontario Hydro Commission was announced earlier by Prime Minister John Robarts.

With long experience in the fields of electrical and nuclear engineering and wide associations outside these areas, Mr. McRae is considered well qualified to interpret and advise on the requirements and problems of industry in general.

His association affiliations include the Ontario Economic Council, the Association of Professional Engineers of Ontario and the gineering Institute of Canada. He has se as president of the Canadian Manufactu Association and the Canadian Nuclear As ation. In 1959, he received an honorary D of Science degree from Laval University.

Mr. McRae's appointment comes at a when Ontario Hydro is turning increasing nuclear power to supplement convent generating resources. This appears particu opportune in the light of the new com sioner's background.

He organized CGE's Civilian Atomic P Department in 1955 to help design and Canada's first nuclear-electric generating tion. He remained general manager of department until last year. One of his last with the company was to complete neg tions with the Pakistan Atomic Energy C mission and the Government of Pakistan a 137,000 kilowatt nuclear-electric gener plant to be located near Karachi. Cost o station will be approximately $60,000,000 much of this sum will be distributed o wide range of Canadian industry—the r suppliers of equipment for this project.

Born in Vancouver, in 1904, Mr. M joined CGE on the company's apprentice ing course at Peterborough in 1925 ar progressed through the engineering depart until he was appointed manager of the P borough Works, largest of the company's ations, in 1941.

He was named assistant to the vice-pres of manufacturing at Toronto in 1950, and a short period on loan to the Departme Defense Production, he returned to CGE he became a vice-president, in 1952, company director in 1957. A year later h appointed chairman of the board. He r from this post last December.

Mr. McRae, who is married and has and a daughter, lists boating as his only hobby. But his new duties as a Hydro missioner are uppermost in his mind.

"Electricity today faces a challenge other types of heating fuels," he observes I fully endorse the idea that we should selling electricity like mad!"

# metropolitan ivy league

by LOIS LANE

The educational floodtide set off by the baby boom following World War II and further stimulated by the "anti-drop-out" campaign successfully aimed at encouraging young people to stay in school has started to reach the university level right across Canada.

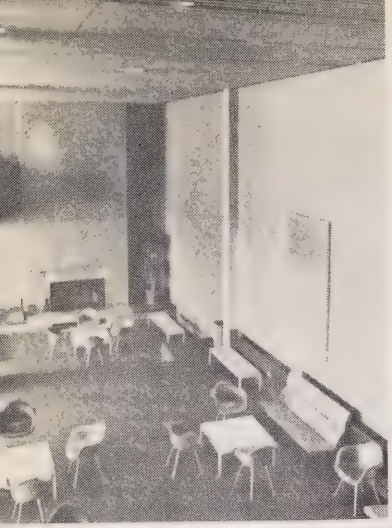
Two years ago, university enrolment of full-time students in Canada was 158,240 — a rise of 11.9 per cent over the previous year. Forecasts made by the Canadian University Foundation indicates that by the fall of 1969, the student population in the Dominion will be almost 317,000. In addition, there are thousands of part-time students taking their degrees via evening extension and correspondence courses.

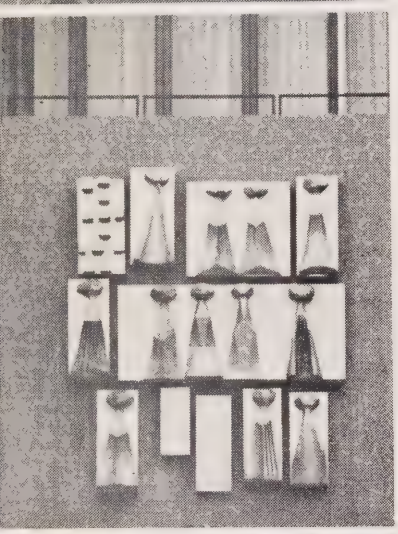
To meet the deluge in Ontario, mammoth expansion plans are underway at existing universities and new institutions are being established at an unprecedented rate.

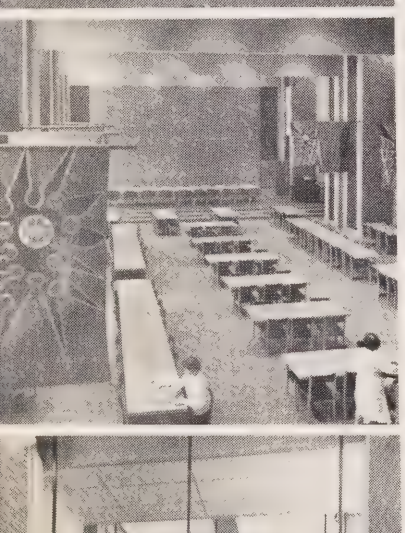
At Peterborough, approximately $70 million will have been spent on Trent University by 1980. Twelve residential colleges are planned and total student registration is expected to reach 8,000. Newly-founded Brock University at St. Catharines also expects to have 8,000 students in 14 years time. And growing pains are in evidence at young Laurentian University, Sudbury, and Lakehead University at Fort William-Port Arthur.

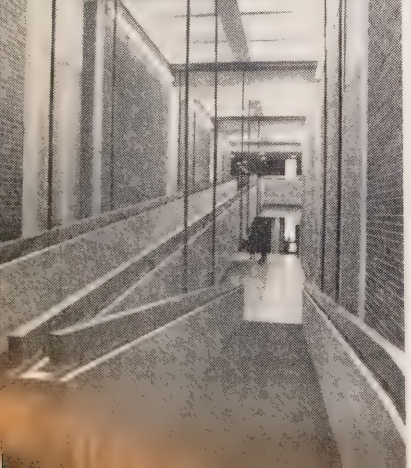
But nowhere is the impact being felt more than in the Metropolitan Toronto area. At the beginning of the fall term, first year enrolment in all courses at the two universities, Toronto and York, reached 5,600. In just four years, by 1970, total registration is expected to top 34,000 — more than the present population of Belleville.

To provide for this fantastic increase, the 116-year-old University of Toronto and fledgling York are rushing to complete multi-million dollar building programs. The University of Toronto has invested more than $83 million since 1957 in expansion and expects this to reach almost $165 million by completion of the current phase in the 1970s. York University, with an ambitious scheme of establishing 12 residential colleges on the new campus, will have invested approximately $109 million in construction by 1970.









# york university

Instead of a split personality, infant York University is developing a split campus with a good deal of togetherness — and all in accordance with a three-fold purpose. Its triple objective is to establish a large suburban university; to provide a degree-granting evening college and to begin a small residential liberal arts college specializing in public affairs.

York University received its charter in 1959 and enrolled its first students, at Falconer Hall on the University of Toronto campus, the following year. It found a home of its own in 1961 on a lush 84-acre estate in northeastern Metro where new buildings are now combined with the picturesque original premises to provide an ideal set-up for a small residential college. It's called Glendon College.

York Hall, the main academic building at Glendon, contains two lecture theatres, 30 seminar rooms, laboratories, the Leslie M. Frost Library and a modern field house with gymnasia, swimming pool and squash courts. A residence accommodates 183 students.

Another phase of York University development is represented by the Joseph E. Atkinson College. Established in 1962, it is unique among Ontario institutions in that all its degree courses and other instruction is in the evening. It began life with 260 students and now has 2,000 persons enrolled. Summer sessions were introduced in 1964 so that, by attending year-round, it is possible for an adult student to win an arts degree in five years while holding down a job.

But the most exciting development at York University centres around the new campus located on 475 acres of rolling farmland in the northwestern part of the Metropolitan area. Here, imaginative and functional buildings are rising to serve a full-time student population which is expected to reach 15,000 by 1980. This academic complex will include from 88 to 93 buildings, including 12 separate colleges, each to accommodate about 1,000 students.

Seven buildings, including Founder's College, were ready to greet the 450 students registered this fall. Under York's system, a student will spend most of his first two years i college and then branch out to other buil for specialized studies.

At Founder's College, natural woods brick have been used effectively to att contemporary decor with a very liveable a phere. Perhaps the most impressive treat has been reserved for the dining room, re cent of the banquet hall of a medieval with banners designed for the college by H Town and Jack Bush.

Another striking building on the York pus is the Burton Auditorium. Seating 6 can be used as a theatre and is designed like Stratford's theatre-in-the-round. Se radiate from a central utilities building t various campus components through an cate system of tunnels and underground duits.

Overshadowed, perhaps, by developme the main campus, Glendon College seems tined to become unique among Can educational institutions. Specializing in p affairs, enrolment at Glendon will be li to 1,000 and it will boast a low 10-to-1 stu teacher ratio. All students will be requir live in residence.

Initially, Glendon Hall will offer a three general arts degree but, according to E Reid, former diplomat and principal-desig the college hopes to confine itself to h students as soon as possible. Familiarity written and spoken French will be compu

Glendon will also abound in political and the administration plans to have polit and senior government administrators l residence for periods ranging from wee to a year.

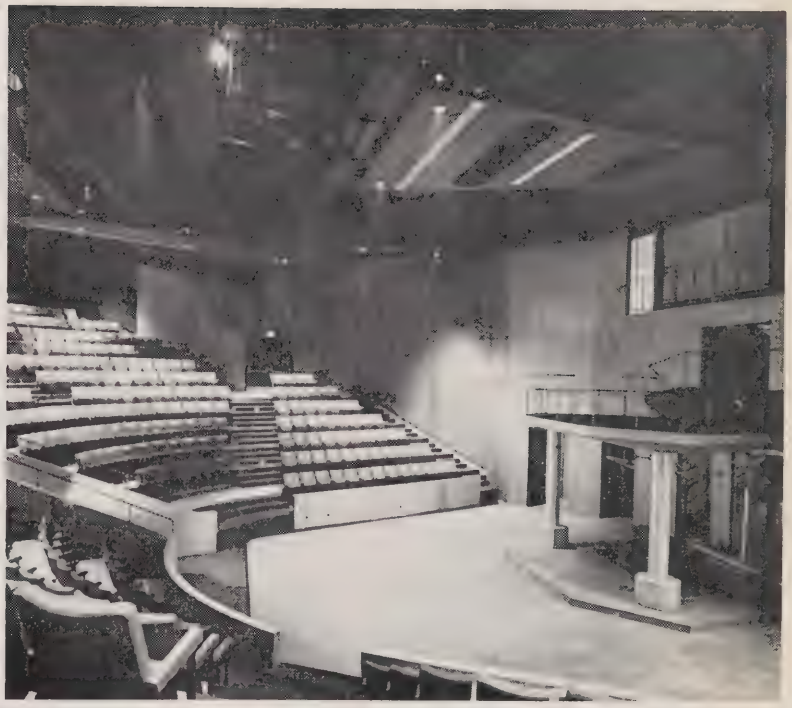
"The college will become the centre of cal discussions, controversy and agitation. Reid said recently. "I hope that the insti of these programs will enable the next g tion to make a better show of mar national affairs than my generation did."

In the light of recent parliamentary pr ings, many of us will say amen to Mr. aspirations.

*Imaginative and functional buildi rising at York University campus in Northwestern Metro. Fu student population is expe reach 15,000 by 1980. Glendon Co a parallel but specialized develo*

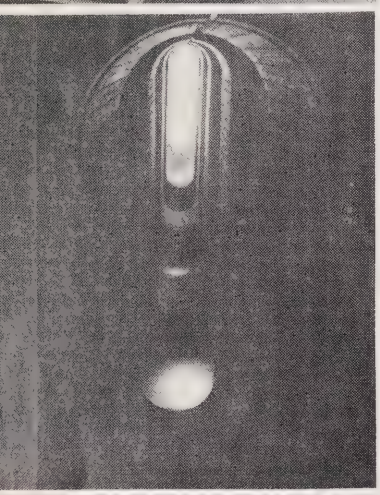
# *Some of its hallowed halls are five years old*















# bastion of learning

People driving along Morningside Avenue in Metropolitan Toronto's east end might be excused for mistaking the imposing structure overlooking Highland Creek ravine for a fortress. And they'd be right — in a sense. The rampart in question is Metro's latest bastion of higher learning — Scarborough College.

Located 20 miles east of the parent University of Toronto, Scarborough College is a fully integrated "constituent" college, and as much a part of the U of T as Victoria College or St. Michael's on the main campus in downtown Toronto.

Specializing in Arts and Sciences, Scarborough College graduates will receive their degrees from the University of Toronto which also supervises the curriculum and staffs the college. This term, a team of 40 is teaching and administrating at Scarborough but many of the staff also teach graduate students at the University of Toronto. Another constituent college is planned for Erindale, in the western section of Metro.

"The concept of creating an affiliate college divorced from the main campus is not a new idea," says James Jackson, newly-appointed director of extension at Scarborough. "In fact, the old Ontario Agricultural College at Guelph (now the University of Guelph) was an affiliate of the University of Toronto for more than 75 years. As time goes on, the college will become unique in that it will develop considerable independence within its affiliate status and will help lessen the general arts and science load at the parent university."

In spite of its rather imposing outward appearance, the massive main building at Scarborough manages to convey a feeling of warmth and "togetherness". Opened for classes last fall, the building has two distinct wings — one for science and the other for the humanities. The administration area is located at the junction of the two wings and is conside the focal point of the building. In fact, all ridors and outdoor walks lead to this spot merge at the "Meeting Place", a vast rotu overlooked by balconies on two levels.

The unpainted concrete walls have a rug textured appearance and the lack of colo the interior is enhanced by natural wood de Three storeys rise above the ravine while are partially underground giving the imp sion that the building rises out of the side the slope.

Scarborough College will be the first Canada to be fully equipped with closed-cir television facilities throughout. Emanat from six television production studios various locations within the building, the p grams can be received in each of the 50 cl rooms and laboratories and in three, 200-s amphitheatres. Initially, the service will limited to science demonstrations but it eventually be expanded to include regular ture presentations. The TV hook-up will be extended to the main campus in downt Toronto.

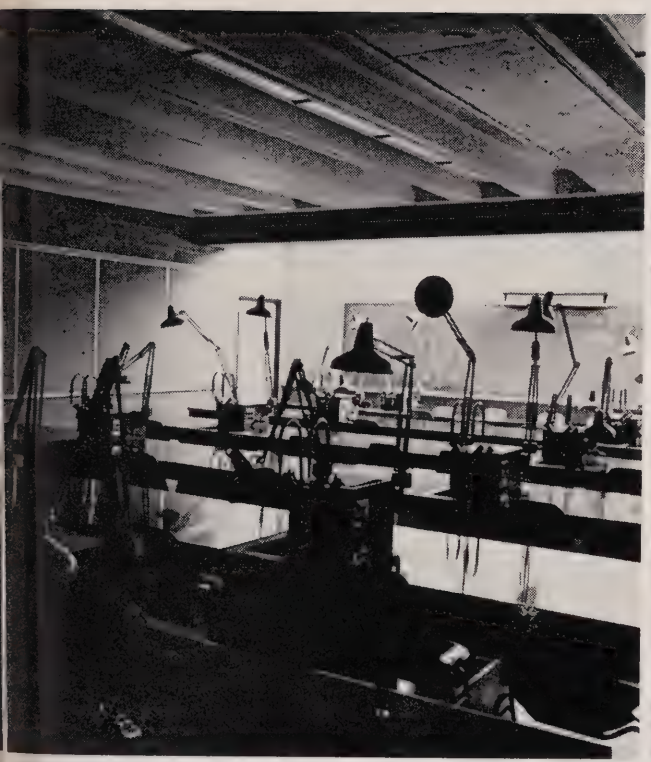
Language laboratories are equipped with latest electrical teaching aids such as t recorders and earphone-microphone sets abling the student to listen to his own vo The equipment is so arranged that the inst tor can listen in and correct pronuncia while the student can query the teacher.

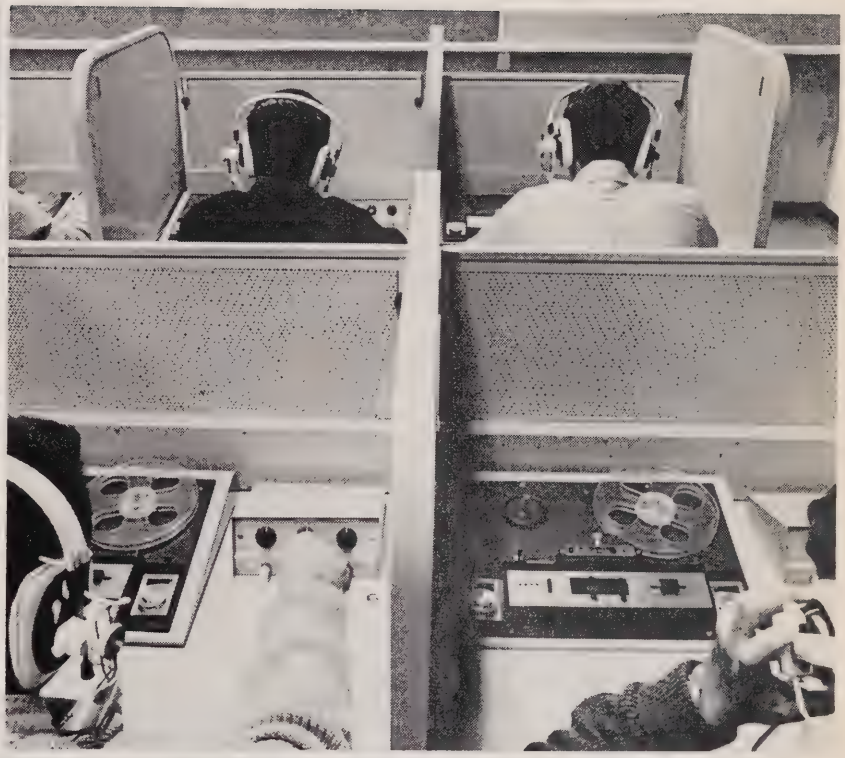
Another important feature of Scarboro College is the 200-acre site itself. Its hea wooded slopes and the lowlands at creek l are considered academically important for research in botany, zoology and climatol

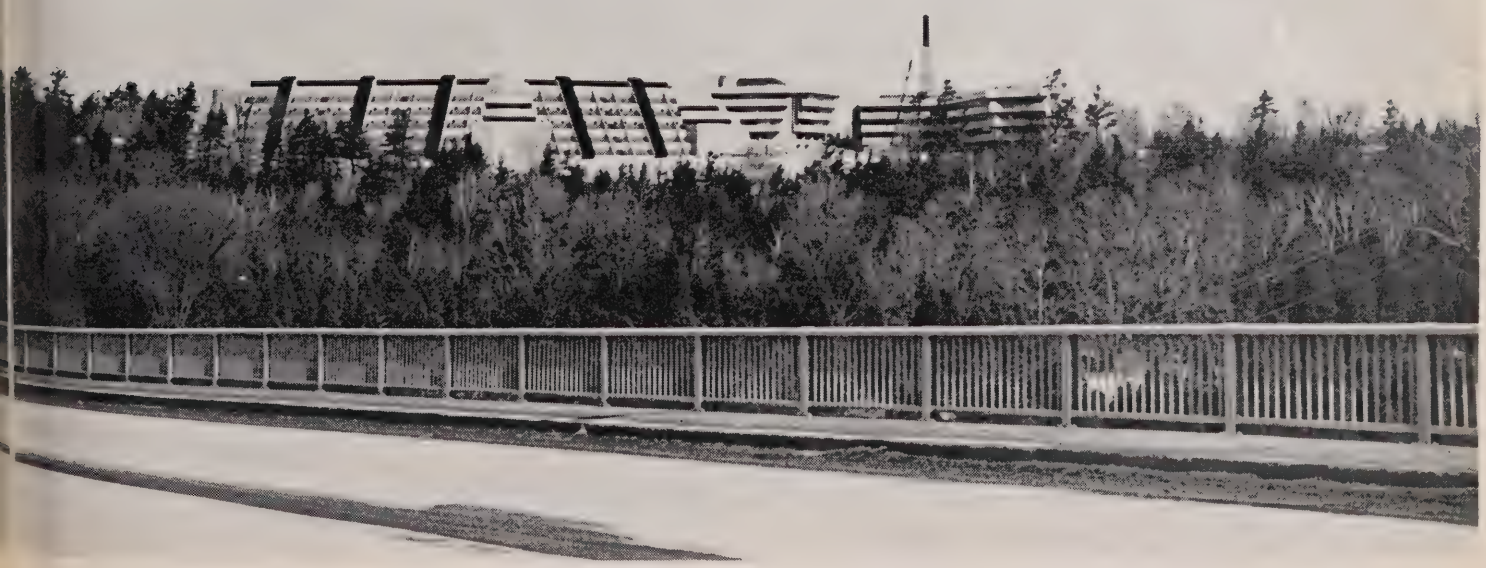
"This year we have 200 full-time stud and 500 evening students registered at S borough," Mr. Jackson explains, "but don this modest beginning mislead you. By the our library, theatre and gymnasia are fini in the early 1970's, enrolment will be ne 5,000 full-time students."

*A full-fledged member of the U of T fa Scarborough College is strict dependent where appearance is concern includes full range of electrica to education including extensive TV faci*

# *Scarborough College is the latest member of the U of T family*







# success on the heating front

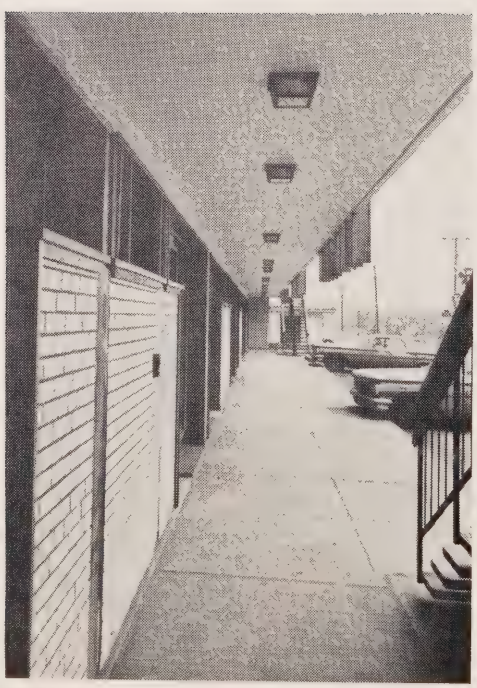
*It's difficult to avoid electrically heated buildings in Ontario these days. The interior and exterior views below suggest diversity of this modern heating method. Left to right are: St. Anthony's Roman Catholic Church, Chalk River; newly constructed Beach Motel, Toronto; kindergarten at Oakwood School, Windsor; Canada Permanent Trust building, Windsor; El Rico apartment, Toronto, and a private home at Brampton.*

With the icy winds of winter melting int
more salubrious breezes of spring an
chapter is ending in the fantastic success
of electric heating in Ontario.

Only promoted since 1959 by the ut
of Ontario, electric heating has gained
remarkable acceptance. Promotion com
with competitive rates has turned many le
builders to electric heating for homes, a
ments and commercial establishments. B
end of 1965, 22,170 homes, 8,000 apart
suites, 200 schools and 490 motels (
units), were being heated by clean,
electricity.

But perhaps one of the largest area
growth in the electric heating field was i







onversion market. Last year, 1,394 older omes were converted from other forms of eating to electric heating. And its estimated at 2,000 of these conversions will be carried ut in 1966.

Contributing to the conversion trend has een the electrical industry's flexibility in proding a variety of systems to compete with her types of energy in virtually all applicaons. For example, electric furnaces will be ble to replace conventional oil and gas burns in homes with forced-air ductwork. And omes with hot-water distribution systems will e readily convertible to electro-hydronic sysms. In fact, the cost of replacing a conventonal hot-water heating system with an electric one will likely be lower than for other types.

Innovations and refinements in techniques and installation methods are also contributing to the trend towards electric heating. An example is the development of an "electric radiant" plaster. The new plaster improves application techniques in ceiling cable installations.

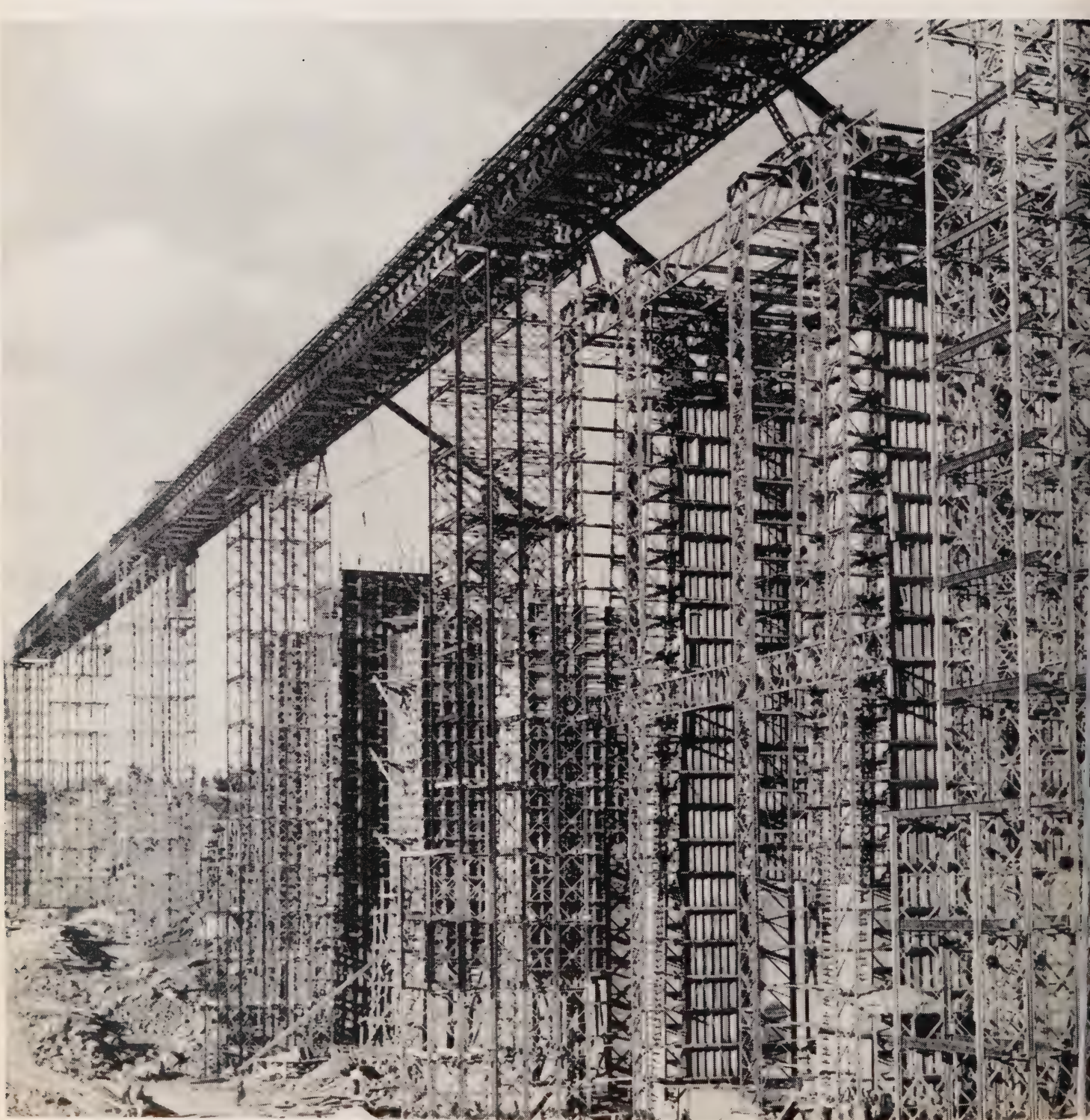
For the builder who is considering electric heating for a 30-storey apartment building or the home-owner with a problem in heating his recreation room — over 300 electric heating information centres have been set up across the province. Located in municipal utility offices, Ontario Hydro area offices, and contractor showrooms, these centres are manned by experts and include displays of the latest equipment as well as literature covering the electric heating field.

At the heart of the electric heating success story are approximately 1,500 qualified electric heating contractors — graduates of special training courses developed and sponsored by the Electric Heating Association of Ontario. Instrumental in launching the electric heating industry on a sound footing and responsible for keeping it on course, the association is about to be merged with the Electric Service League of Ontario. The new group will supervise and promote the standards of both electric heating and wiring in the province. □







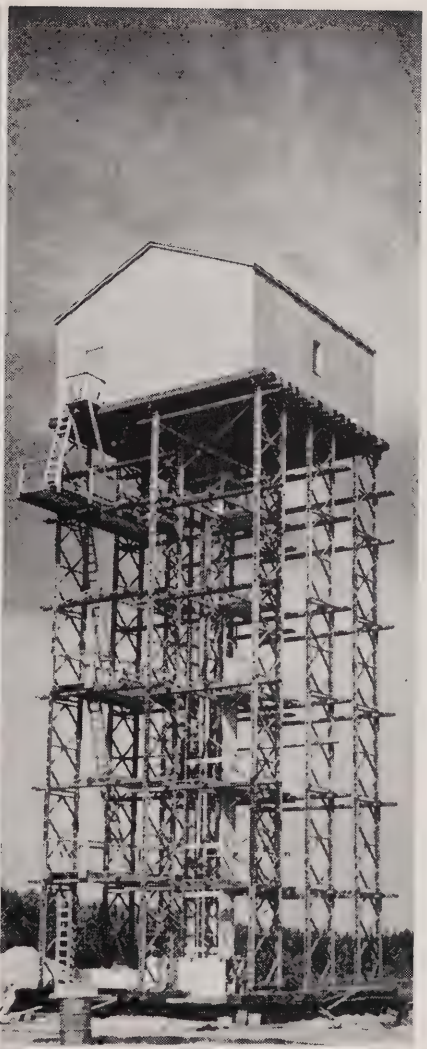


# a bridge with the past

## slowly fading from the hydro scene, Sir Donald Bailey's bridges span a colorful era in the construction story

by PAUL CHISHOLM







Long after the tanks and planes of World War II had been consigned to museums or the scrap heap, Bailey bridging survived to play a vital role in Ontario Hydro's vast post-war expansion program and it continues to make itself useful in a wide variety of ways.

Sometimes likened to a king-sized Meccano set, Bailey bridging won military immortality as a quick means of fording rivers in pursuit of the enemy. For British designer Sir Donald Bailey, the invention won him his knighthood.

Consisting basically of steel fabricated frame panels pinned together end-to-end, Bailey bridging can be speedily assembled on rollers for launching across the thin air. A wide range of spans and loading capacities can be obtained by arranging the panels side-by-side or one on top of the other. Beams, girders and deckings augment the structures.

"Following the last war Hydro bought up all the war-surplus Bailey bridging it could get its hands on," recalls Pat Henderson, formerly Hydro's Bailey bridge inspector and now stock control analyst. "In 1946 and 1947 approximately 20,000 tons were obtained in Europe — practically all the Bailey bridging used by Canadians during the war."

And it was a good investment. The bridging not only helped overcome the critical steel shortage which threatened to delay Hydro's urgent construction program after the war, but it helped reduce construction time because of the speed with which it could be erected. It cost about half as much as the conventional steel and timber which would otherwise have been required.

Versatility is another of its virtues as it is re-usable many times over — even on the same job. The five by ten-foot sections are easily man-handled and can be transported in a standard three-ton truck. Conditions on remote Hydro projects are in many ways similar to those in wartime for which Bailey bridging was designed.

Aside from using it for river crossings at

*Since the war Hydro has made extensive use of Bailey bridging on power projects. Maze of bridge sections, far left, was at Des Joachim. Other uses shown include access bridge at Kipling G.S.; barge platform for ferrying heavy equipment; and water tower supports at Little Long Rapids on the Mattagami.*

*Sir Donald Bailey's wartime invention helped hasten Allied victory in World War II. Photo shows Royal Canadian Engineers constructing a Bailey bridge over the Orme River in France, in 1944.*



many of its generation projects, Hydro, in conjunction with the Civil Engineering Department of Toronto University, pioneered many additional uses for Bailey bridging in civilian construction. At Hydro it has been used as working platforms for huge crawler cranes, structures for handling conveyors and to distribute concrete, support framework for concrete sections and to raise gantry cranes. Other applications have included framework for buildings and office accommodation, water tower supports at construction sites, vehicle ramps and even "tilt tables" for vehicle testing.

Hydro's use of Bailey bridging has declined gradually with the shift in emphasis to thermal-electric stations where it has fewer construction applications. Still used on hydro-electric projects, it has been replaced by lightweight tubular steel for such purposes as scaffolding.

But in its original application of spanning rivers and gorges, Bailey bridging still holds its own — both at Hydro and for the military, for whom it is still manufactured.

"Hydro's stock of Bailey bridging has dwindled to approximately 3,400 tons," says Mr. Henderson. "We had that much in the air at one site alone during the construction of Sir Adam Beck No. 2 generating station. What we have on hand is sufficient to meet all requirements for the next 15 years."

Much of Hydro's original stock is to be found in bridges which give access to construction sites or have been built along power line rights-of-way. In addition there are numerous permanent Bailey bridges owned by Hydro throughout the province, some of them connecting generating stations. These have fitted with more lasting deckings and they been zinc coated to reduce maintenance

Ready markets still await surplus bridging released by Hydro.

"The large construction companies still it up," Mr. Henderson explains. "And at six townships and other municipalities bought bridges installed temporarily by during construction of the Extra-High-V line. In most cases they replaced less sul tial structures."

A mere shadow of its former self o Hydro construction front, Bailey bri seems destined to "simply fade away" lil old soldiers who will remember it well. B fighting a stubborn retreat and will lik around for a good many years to come.



# along hydro lines

## uclear Contracts Reach $50 Million

ckering nuclear-electric station is helping to power Canadian business and dustry long before it produces its first kilowatt. The $266 million Ontario dro project has pumped more than $50 million into the economy since e plant was announced about 18 months ago. Hundreds of workers in zens of firms benefit from the use of Canadian nuclear know-how. Many ntracts include options for more work if the station is expanded beyond e twin 540,000-kilowatt units now committed.

Canadian content of the contracts is more than 90 per cent. Among the gest recent awards was the $4.5 million order for steam generators and ated equipment from Babcock-Wilcox and Goldie-McCullough of Galt. In s equipment, heavy water heated in the nuclear reactor gives up its heat ordinary water to make the steam which drives the turbines.

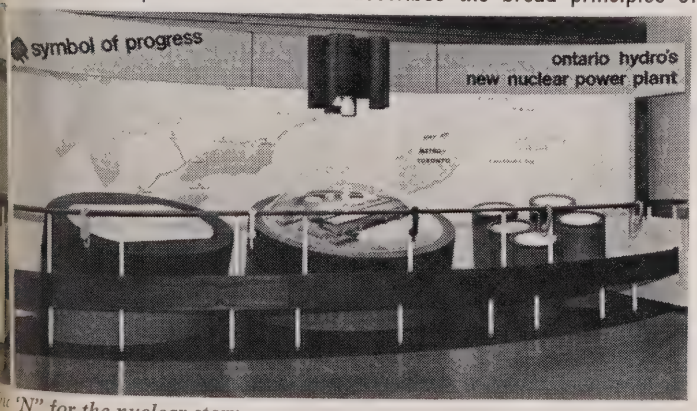
Byron-Jackson of Canada, Toronto, was awarded a $2.5 million contract to vide pumps and motors to carry the heavy water to the steam generators. er driving the turbines, steam is condensed for re-use, and Montreal omotive Works, Montreal, is to provide the condensers in a contract th nearly $1.5 million. Canadian Ingersoll-Rand Company will supply con- sate pumps and related equipment for about $400,000.

In the site, pile-driving is in progress for the reactor buildings and about temporary service buildings are at various stages of completion. Of the mated 150 men on site, about 100 are Hydro staff. Peak work force of e than 1,300 men should be reached in 1968. □

## ght-Sound Display

io-visual techniques have been used to good advantage in the new ario Hydro display of the Pickering nuclear-electric generating station 's now making the rounds at fairs and exhibitions. The 20-foot-long lay, first seen by delegates to the recent OMEA-AMEU convention in nto, tells the story of this $266 million nuclear power project via a minute taped broadcast coupled with animation.

e voice heard when the telephone receivers are picked up belongs to Heskith, a Toronto newscaster, who explains the nuclear process of ing water to produce steam and describes the broad principles of




'N" for the nuclear story.

nuclear fission. Synchronized illustrations accompany the talk and the display includes a scale model of the Pickering station.

Millions of people are expected to view the display as it travels around Ontario during the next few years. The Pickering plant, begun last year and expected to be in service in 1970, will have a capacity of 1,080,000 kilowatts from two units. □

## Water Heater Changes

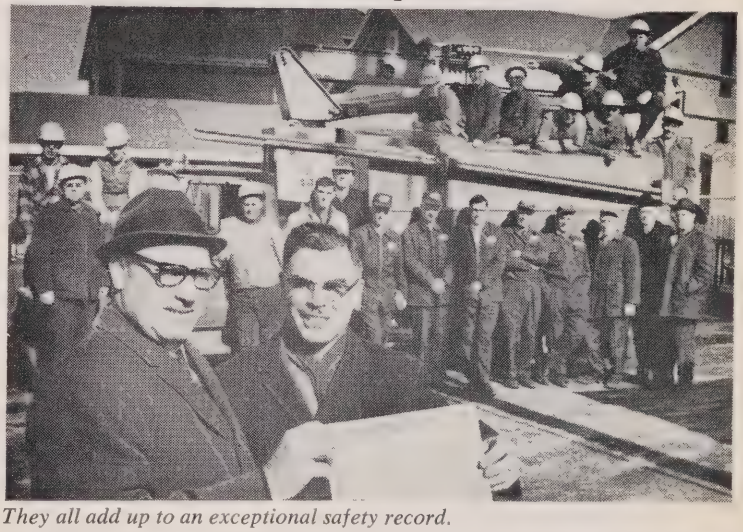
Ontario Hydro announces a new water heater rental plan for dealers in rural operating areas and local systems.

In the past, authorized dealers could sell units outright for cash or arrange with the customer to finance the unit up to a period of seven years on time payment. In the case of the time payment plan, Ontario Hydro paid the dealer a specified amount for the installed unit and collected the monthly payments from the customer on the energy bill. All rental units came from Ontario Hydro stores.

Under the new plan the dealer can offer a customer a rental unit from his own stock. When doing this he negotiates a rental agreement on Ontario Hydro's behalf and again receives a specified amount for his efforts. Ontario Hydro collects the monthly rental payments from the customer on the energy bill.

The new plan was first tried out on a trial basis in Niagara Region and was accepted enthusiastically by dealers. The plan will also reduce the number of water heaters in area stores resulting in lower administration and handling costs. □

## North Bay Puts Safety First



*They all add up to an exceptional safety record.*

In congratulating 22 North Bay Hydro line and service men for accumulating 185,515 man-hours without a lost-time accident, B. M. Graham, manager, had special praise for Ray Vaughn, service installer and Archie Truchon, foreman, for their exceptional records.

Mr. Vaughn has acquired 37 accident-free years and Mr. Truchon, 36 years. Safety association files reveal that these are the best individual records for employees of municipal electrical utilities in Ontario. Harry Flack, left, manager of the Electric Utilities Safety Association, is shown presenting a certificate of merit for 1,000 days of accident-free operations to Mr. Graham, who accepted on behalf of his utility. □

## Toronto Township Claims First

Toronto Township claims to be the first Canadian municipality to have 1,000 single family all-electric dwellings built and occupied. This municipality was also one of the first in Ontario to have total-electric homes. These were built in 1959 — the year construction of electrically heated homes began in earnest.

Elmer Wright, vice-chairman of Toronto Township Hydro, says that every third house in the township is now being built to medallion all-electric standards. "It is almost unbelievable that just seven years ago we had only two or three all-electric homes and now there are 1,000. But this is the



*They represent a milestone in electric living.*

pattern in all parts of Ontario. In 1959, there were just 20 total-electric homes in the province, while today there are more than 22,000," he says.

Presenting the 1,000th medallion certificate issued in the township, to Mr. and Mrs. Arthur Mead and their family, is Reeve Robert Speck, right, while Mr. Wright looks on. □

## Hydros Unite for Expo

Ontario and Quebec Hydro will co-operate in producing exhibits for the 1967 World Exhibition in Montreal. They will share equally in contributing a total of $1,500,000 toward the cost of installing displays in the "Resources for Man" section of the "Man the Producer" pavilion.

Details of the Hydro exhibits are being developed by Expo 67 officials in co-operation with the two provincial utilities. The $11,800,000 Producer Building, largest of Expo 67's theme pavilions, will straddle a canal on the western end of Ile Notre-Dame, one of two partially man-made islands in the St. Lawrence River forming the bulk of the Expo site at Montreal.

Ontario Hydro also plans to participate in the Ontario Government pavilion at the world exhibition. □

## Bumpy Curling

Into each life a little rain must fall, or so the saying goes, but to Cannington curling buffs it was becoming ridiculous. C. S. Morgan, Cannington Rural Operating Area manager, reports that condensation, dripping from the rafters of the local flat-roofed arena, was causing bumps on the ice during warmer days in the winter. The installation of four, 5,000-watt fan-forced heaters on one wall proved to be the solution. The heaters kept the warm air circulating across the playing area, absorbing the moisture in the air.

"We found that the ice surface stayed at a constant 28 degrees," Mr. Morgan relates, "and that the heating provided excellent player comfort as well."

Beaverton is another Georgian Bay Region curling club which has recently installed electric heating. Here, the two-level gallery and lounge are equipped with base-board electric heaters. □

## Juiced-Up Oranges

Orange trees in Riverside County, California, are hooked up to Southern Edison lines to see if electricity can be used to speed up plant growth and make the trees part with their fruit. The application, still in experimental stages, may help fill in the valleys of energy demand . . . as citrus trees in the utility service area represent a potential of 9,000,000 kilowatt-hours.

Tests have been conducted at University of California's experimental citrus groves, and indicate that electricity can help growth and harvesting. Citrus fruit does not drop when ripe and must be picked or it will rot. This fact, along with rising labor costs, is of concern to the western citrus industry.

Tests were based on the principle that positively-charged ions tend to travel toward the negative pole of an electrode, taking molecules of water along regardless of the natural lines of flow. This idea was applied to sap flow by inserting electrodes into the base and top branch of an old tree, with the negative pole at the top. A small constant direct current was applied and within two weeks, new growth appeared. Worked in re fruit has been shriveled and dried.

Additional experiments reversed the polarity momentarily at the where the stem and fruit come together. This caused the ripe fruit to but not the green. The limb itself remained healthy.

But there are still problems to overcome — chiefly, how to elect whole grove at reasonable cost.

## Grass Roots Electric Heating

The first major electrically heated turf-grass area in the United Sta planned for the new Civic Centre Busch Memorial Stadium in St. Several other installations are now in use in England and Sweden.

At a recent meeting of the American Society of Agricultural Engi delegates were told that although it will not melt snow as fast as it underground electric cable heating will speed up removal. Also, reju tion of existing turf can be accelerated and new sod or seedings w stimulated. Another potential benefit is the possibility of combining season grasses having greater wear resistance with cold season gras improved turf in colder parts of the country.

The St. Louis installation will have electric heating cables placed inches below the sod and spaced one foot apart. They will automa operate when temperatures drop below 40 degrees or when soil te atures once inch below the surface falls below 44 degrees. An electro controlled underground irrigation system will provide moisture when sary. Soil moisture sensors will cause water to flow through underg polyethelene pipes and force up hidden sprinkler heads. When the so received enough water, soil sensors will automatically cut off the s

And to prevent players receiving a premature shower, an electric clock will stop the irrigation process during games.

## Funds for Research

Edison Electric Institute is expanding its research support program. F Person, president of this association of several American utilities, anno outlays will be increased for research on a high density rechargeabl tery system for vehicles and on electrical resuscitation.

Additional work will be done on optical radiation from power plant flames. Boiler-tube materials, plutonium as a nuclear fuel, tree-growt air pollution control are other projects receiving EEI funds. At the e 1965, EEI's commitment to research projects underway totalled $10. lion, up 27.5 per cent from the previous year.

## Triple Crown of Safety



*Winners in the safety league receive awards.*

The annual Electrical Utilities Safety Association awards for low ac frequency rates were presented at the 57th annual OMEA-AMEU con by C. S. Phelps, general manager of Sarnia Hydro and vice-president association. This year's awards were made in three classes and w Trenton PUC for the 60,000 man-hours and under group; Kingston F the 60,000-250,000 category; and to London PUC for the above 2 man-hour group. Receiving the plaques on behalf of their utilities ar left to right: J. H. Page, manager, Trenton PUC; C. S. Phelps; R. W. chairman, Kingston PUC and E. W. Curtis, chairman, London PUC.

## alian Incandescent Lamps




*d still the collection grows.*

ee early incandescent lamps are examined by members of the Toronto ction of the Illuminating Engineering Society during a visit to Ontario dro's historical collection in Etobicoke.

Left to right are G. E. Davidson, Ontario Hydro; Miss M. G. Currie, assist- professor at the University of Toronto's Department of Electrical En- eering; and G. F. Deane, Toronto Hydro.

The lamps, made in 1882 by Italian pioneer Alessandro Cruto, employ n filaments of carbon-coated platinum wire. They were obtained for the lection by the University of Turin from the Philips Company in that r. □

## municipal briefs

**Petrolia PUC** celebrates 50 years as a member of the Hydro family in May. A booklet outlining its history will help publicize the event, which coincides with the town's centennial.

**Owen Sound PUC** plans to build a new sub- tion to service the southwest area of the city. The site selected once tained a blacksmith shop, established in 1859 by the great-grandfather t.-Col. A. A. Kennedy, PUC and Ontario Hydro commissioner.

**erloo PUC** is telling its story to the public by means of a bimonthly rsletter called the "Voice of Your Own Waterloo PUC". Recently mailed ll 8,000 customers, the first edition deals with commissioners' responsi- y, the data processing billing system, system security and well drilling. n Bradley, manager, says the publication will help foster closer relations n customers in the fast-growing city.

**ean Hydro** announces that customers can now choose and order lawn o standards of their choice for the "Light Up Nepean" centennial pro- . Community association representatives recently met with Nepean ro commissioners to select five standards which will be offered to dents at "basic cost" through their Hydro.

**. Little,** Brockville PUC manager, skipping a team in the recent Thousand ds Bonspiel, scored an eight-ender, which is about as rare as a hole e in golf or a 29 score in cribbage.

**ndments** to the Power Commission Act are being introduced in the On- Legislature by Energy and Resources Minister Simonett to give munici- Hydro commissions the power to invest funds in short-term bank loans.

**n MacDonald** has replaced John McLaren as chairman of Lancaster Mr. McLaren, manager of the local Ontario Liquor Control store, was ated by a county court decision. He was disqualified because he lived house owned by his mother and was not a property owner or tenant.

**han Township,** studying the possibility of establishing its own Hydro em, has asked for an inventory of Ontario Hydro facilities and equip- in the area.

**Dobronyi** has been appointed manager of engineering at London PUC, cing Arthur Ferguson who becomes executive assistant. Mr. Ferguson concentrate on research and development work. Formerly distribution engineer, Mr. Dobronyi has been with the London PUC since his graduation in electrical engineering from Queen's University in 1954.

**Mayor Saul Laskin** of Port Arthur has been advocating the use of utility commission surpluses to help alleviate taxation, according to the Lakehead papers. As reported in the Port Arthur News-Chronicle, he says the present law requiring commissions to plow back their surpluses into the system is "an old-fashioned concept and should be changed by legislation, permitting broader use of commission profits."

**Utilities across the province** are being asked to prepare histories of their commissions for inclusion in the Hall of Memory project in Niagara Falls. In Port Arthur, Ralph Chandler, former PUC general manager, has been asked to undertake the task.

**Recent annexations** of adjoining territories by the municipalities of Brockville, Hawkesbury, Milton, Waterloo and Windsor, has resulted in the transfer of more than 900 customers from Ontario Hydro's rural system to the municipalities concerned.

**Electric League of Sarnia** elected their new executive at the 1966 inaugural meeting held recently. Bill Ketley of Power Installations (Sarnia) Limited is the new president. He will be assisted by Ralph Webber, Huron Electric, vice-president; and M. H. Chappell, Sarnia Hydro, secretary. □

## All Electric Football

First applied in Europe and the U.S., the idea of heating turf for sports is getting a try-out in Western Canada. In fact, the Banff Springs Hotel may have the first electrically heated golf course in Canada.

Tests are being conducted by federal and provincial agriculture departments and private companies to evaluate the advantages of electric cable installed under a putting green at the famous Alberta hotel. It is hoped the technique can be as beneficial as it has been in the U.S., Britain and Sweden. Benefits include extended operation for the heated area, whether golf course or football field; speedier rejuvenation of turf during heavy use; reduction of damage from fungus disease; and generally improved turf.

Sponsors of the Banff project hope the test will lead to use of turf heating at Western Canadian football stadiums. A spokesman for an electric utility says this could be the key to better football conditions in the West in late fall and possibly enable prairie cities to host the Grey Cup. □

## New Nuclear Headquarters



*Nuclear newcomer to a research community*

Installation of experimental equipment is underway in Atomic Energy of Canada Limited's new design and development facilities in the Sheridan Park Ontario Research Community, about 17 miles west of Toronto.

The 600 engineers and technicians who will move to the new, $6,000,000 quarters this summer are in AECL's Power Projects and Prototype Design Engineering groups, now in Ontario Hydro's A. W. Manby Service Centre and other temporary quarters in the Toronto area. At the new location will be a three-storey engineering office building of about 110,000 square feet and a separate 75,000-square-foot laboratory and office (shown).

Principle work of the groups is the design of nuclear power projects and the testing and development of components and equipment. □

## He's Off on the Right Foot



*The president receives a gavel.*

More than 30 leading figures in the municipal and provincial Hydro organizations gathered at the Royal York Hotel recently to honor E. F. Burbank, newly-elected president of the AMEU. At the testimonial dinner presentations were made by J. W. Hammond, Hamilton, on behalf of the AMEU; and by Dr. J. E. Wilson, Barrie, president of the OMEA. Dr. Wilson is shown making the presentation while W. Ross Strike, retired chairman of Ontario Hydro, looks on.

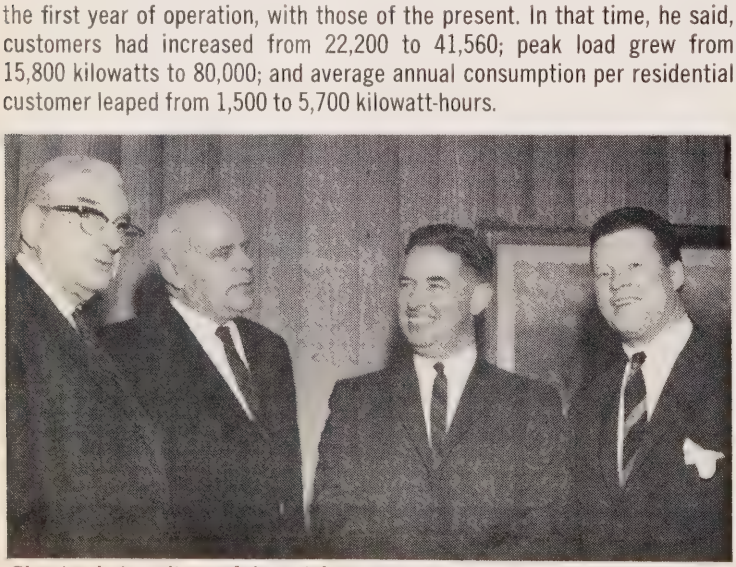
The presidency of the association alternates annually between large and small utilities so that the particular problems and requirements of both will be more fully appreciated. Mr. Burbank is a senior member of the engineering staff of Toronto Hydro. □

## York Hydro Marks 25 Years

Only half as old as many of the province's municipal electrical utilities, the Township of York Hydro System makes up in enthusiasm for anything it may lack in history. Pride in its record was evidenced at a recent gathering to celebrate the 25th anniversary of the system. Sharing in the celebrations marking the occasion were utility officials throughout Metropolitan Toronto, OMEA and AMEU representatives, Ontario Hydro commissioners and leaders of commerce and industry in the service area.

In a brief address, Gordon Keyes, chairman of the committee of council administering the utility, foresaw "a long and outstanding life ahead for this servant of the public with each passing year adding to its vitality and to the challenge it faces in meeting the power requirements of the fast-growing area." He said promotion of the increased use of power was the paramount consideration and that the utility was fortunate in having "the finest and most dedicated men in the business" available for the job.

In tracing the growth of the utility, Mr. Keyes contrasted 1941 statistics, the first year of operation, with those of the present. In that time, he said, customers had increased from 22,200 to 41,560; peak load grew from 15,800 kilowatts to 80,000; and average annual consumption per residential customer leaped from 1,500 to 5,700 kilowatt-hours.



*Chatting before dinner, left to right, are: Ian McRae, Ontario Hydro commissioner; Gordon Keyes, chairman and William Secord, manager, York Township Hydro; and Chairman George E. Gathercole, Ontario Hydro.*

Offering congratulations from the Province on behalf of the minister, Wilfrid Spooner, minister of municipal affairs, cited York ship Hydro's record as an example "for those who feel that black is and white is white in the matter of who is capable of operating Hyd the municipal level."

George E. Gathercole, newly-appointed chairman of Ontario Hydro the gathering that it was the utilities from which the Commission derive its knowledge of community requirements. "We shall practi open door policy," he said, "and always be open to suggestions and a In this way, we hope we can do the very best job for the municipa and for the people of Ontario."

Congratulations were also extended by Dr. J. E. Wilson, president OMEA, and by E. F. Burbank, president of the AMEU.

A feature of the anniversary dinner was the presentation of 25 service certificates to six employees who have been with the utility its inception. Altogether there are 14 original employees and all w honored at a special function in the future.

## Hydro Wintered Well

Ontario Hydro experienced "a much easier winter" in the words of its tions personnel. Stream flows were improved in most areas and ice wa a major problem. The ice boom at the mouth of the Niagara River averted heavy ice flows during the winter and ice admitted to the river its removal was handled without difficulty.

## The Ashes Were Interred



*Primitive but practical.*

During the installation of a new water main in West Lorne, the PUC d a long forgotten pipeline made entirely of wood. Installed shortly aft Michigan Central Railroad went through the village in 1872, the lin thought to have carried water to the railroad tower. Holding a sect the line, Ken Phoenix, PUC superintendent, points out how a three-an half inch hole was drilled through a 12-foot length of ash log to for pipeline. A pipe joint is shown at left. Underground for nearly a ce the wooden pipes were almost as sound as the day they were installe

## February Energy Production

Primary energy provided by Ontario Hydro in February totalled 3.8 billion kilowatt-hours, an increase of 9.5 per cent over the san month a year ago.

For the first two months of 1966, the total is 8.17 billion ki watt-hours, up 10.0 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand February was 3.88 billion kilowatt-hours, 1.0 per cent lower th the previous month.

The seasonally adjusted total for February represents 46. billion kilowatt-hours at annual rates. This is 335.0 per cent of t energy demand in 1949.

# off the wires

■ What with the bird being on the wing and the bee about to do likewise it must be spring cleaning time again and it behooves us to sweep out the odds and sods which have accumulated in our files over the long months of winter.

Particularly appropriate, perhaps, in the season of birds and bees, is this bit of poetry which appeared in the Saturday Review. Credited to Edwin D. Kilbourne, it was written in response to a news item describing an electric clock designed to help married couples plan their families. Like a wrist watch with a date indicator, the clock shows a black window on those days when love may have free reign and red when to proceed carries the possibility of little pattering feet.

Reads the poem:

Now this is our Rodney
(And Rodney's a dear)
But it's really a caution
How Rodney came here
Our clock is electric
The weather was warm,
And the thunder and lightning
Were making a storm.
Well, we glanced at the clock
Before going to bed,
But it must have got stuck
On the black-not the red.
So this is our Rodney
(Just see how he coos)—
The result of a burnt out
Electrical fuse.

Whether or not this kind of electric clock gains wide-spread acceptance is yet to be determined. But the device suggests the absolute need for our electrical utilities to achieve the highest possible degree of service security. The alternative — too many Rodneys.

■ There was an old lady who lived in a shoe and chap named Peter was said to have kept a wife very well in a pumpkin shell. Neither had anything on a 71-year-old resident of Smith's Falls, who doesn't even know Mother Goose. He drew seven days for living in a clothes dryer.

In sentencing the culprit for vagrancy, the local magistrate ruled that a public coin wash could not be termed a person's home. Police testified that the accused had spent several nights in the laundry and on chilly nights would curl up inside a dryer. The case came to a head one morning at 10:30 a.m. when a housewife became hysterical as she was about to dump her damp washing in a dryer occupied by the snoozing "tenant".

Asked for his permanent address, he said it was inside the dryer. A Westing House, no doubt, but even so, the poor chap was all washed up. Perhaps the seven day sentence will act as a deterrent to further all-electric living but it seems a bit harsh. He may only have been going through a cycle.

Firemen figure in two items which tend to tickle our jaded fancy. The first concerns an elderly lady who was hurried from her smoke-filled apartment building by firemen after they bashed down her door with their trusty axes. "I wish they had knocked," was her only comment.

And suspicion spoiled the scalloped potatoes for another Toronto area lady who ended up explaining her hot new recipe to the gallant smoke-eaters.

Place one bottle of whisky in the oven, turn it on high — and stand back.

She had hidden the bottle in the oven so that painters and decorators working in the house wouldn't be tempted. Forgotten, it was joined before dinner by the scalloped potatoes. Stimulated by the application of heat, the lot erupted into a hot potato toddy.

If there is a moral to be drawn it would have to do with having more faith in one's fellow man. On the other hand, damage was slight—trifling compared to the potential havoc which might have been wrought had the painters downed the whisky straight.

■ According to our interpretation of an editorial in the Toronto Telegram, an Etobicoke Township official has proposed a by-law making it mandatory for all residents to ensure that the hot water used in their baths is never, ever, below a minimum temperature of 110 degrees. On the surface, we would have to agree with the newspaper's assessment and award this "Keep Etobicokans Clean" proposal the prize for "the most original ordinance in the history of civic legislation anywhere in the world."

As the paper points out, legislation, to escape mockery, must be capable of enforcement. In this instance, bath water temperature inspectors would have to be appointed and the cost of salaries, uniforms, thermometers and eye blinkers would appear to outweigh any possible benefits the plan might offer. Then, too, the lop-sided peak work load would take some working out. Saturday nights would be impossibly heavy so that an extensive advertising and public relations program would be required to change bathing habits.

Even so, blanket inspections would, in our view, be completely unworkable for an area the size of Etobicoke and the authorities would have to revert to spot-checks after the fashion of the income tax people. Here, too, problems can be envisioned.

Comely young widows would have a right to complain if their privacy was invaded with undue regularity. This might be partly overcome by hiring inspectors over the age of 90 but the fatality rate through drowning could prove prohibitive.

To succeed at all, the law would have to be flexible. Exemptions for medical reasons, for example, would have to be dealt with on their individual merit. Those seeking to bathe in water somewhat below the 110 degree level might be required to show a certificate signed by the family physician and bearing the signature of the chief bath water temperature control officer.

A cumbersome procedure at best and one likely to defeat the whole purpose for which the ordinance seems to have been designed. In defiance, the good people of Etobicoke might just decide to stay among the great unwashed.

■ From Operative X — better known to some as Mo Shepherd of the Electrical Utilities Safety Association — comes word of a 5,000-unit housing development within sight of the Georgian Bay Regional Office — and all without Hydro service.

Shaken by the news we quickly contacted Operative X-10 in the Regional PR department who confirmed the veracity of the communication. He reported, further, that these homes were occupied by a primitive sort of people who, without plumbing of any sort, resorted to cutting holes in their floors of a size roughly consistant with the dimensions of the occupants.

Being country bred, we hardly raised an eyebrow until our stout Barrie informant went on to recount further peculiarities about the living habits of these people. He said vast quantities of bottled goods could be observed being brought into the colony but the houses never seemed to get full. He could not say as much for the people themselves, and he was puzzled, too, by their penchant for fish — a desire they seemed to satisfy without recourse to the local butchershop. Here was the clue we were seeking.

These people were ice fishermen. But the disclosure never fazed Operative X. Why not fish better electrically, he enthused? Electric heaters would do away with messy woodstoves, TV would bring in the Saturday night hockey game and mother could knit by approved lighting level standards.

Who would keep an eye on the all-important bobber? Flashing lights or warning buzzers could alert the inhabitants to the presence of inquisitive fish and a bolt of electricity could be used to stun the critters at the touch of a button.

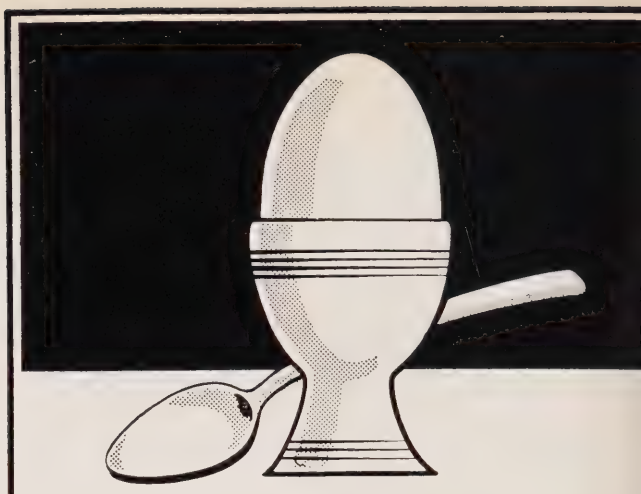
Come to think of it, though, why not call the butcher. That way they come cleaned. On the other hand, maybe we could use that big weekend load?

■ If anybody thinks today's advertising ethics leave something to be desired, we would refer them to the no-holds-barred bulletin issued by the Edison Electric Illuminating Company of Boston, in 1886. Extolling the virtues of the incandescent light, it listed the following disadvantages of gas: "sulphur thrown off, ammonia thrown off, carbonic acid thrown off and sulphurated hydrogen thrown off".

In addition to the "throw-offs", the list included: "atmosphere vitiated, danger from suffocation, colors unnatural, blackening of ceilings and water in pipes".

Against this, the incandescent light was described as "The only illuminant used by man which can be placed in any position, right-side-up, upside down, in any location — and which can be made in any sized units of light and is self-contained. □

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**one ordinary penny**

won't buy an egg—or a slice of bacon.

**but...**
**one hydro penny**

will cook ten bacon-and-egg breakfasts for two in an electric fry pan.

YOUR HYDRO PENNY IS THE BIGGEST PENNY'S WORTH IN ONTARIO TODAY

***your hydro***

Electricity is a bargain in any man's language as advertisement points out. It is one of several pared for the municipal electrical utilities to a in their local advertising programs. Others equa penny's worth of electrical energy with the op tion of a washer, sewing machine, electric drill a record player. Their uniform layout helps esta continuity and a "family" resemblance. Ma stereos of these and other advertisements are a able without charge from the Advertising and keting Services Department of Ontario Hydro.

**1906/1966 sixty years of hydro progres**



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## may/1966

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- centennial count-down
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may/66

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**Looking out on the past.** Few Hydro pioneers are better qualified to disc on the electrical past than Dr. E. V. Buchanan of London. Active an keenly interested in the rapidly changing Hydro scene at 79, Doctor Buc traces his utility association back to 1910. He was manager of the L Public Utilities Commission for 37 years.

His contribution to Hydro in Ontario will be perpetuated by one Commission's most important transformer stations, which bears his and he was the recipient of an honorary doctorate degree from the Univ of Western Ontario, in 1958.

Today, as he pauses from time to time in the task of preparing a h of the London utility, he can gaze out his window at Headley — the where his friend and confidant, Sir Adam Beck, used to live. His fam with the "Father of Hydro" adds spice to his reminiscences on Hydro' anniversary. See page 12.



projects ranging from castle restoration to a hall of memory are being hustled along as the centennial count-down continues.

# one hundred minus one

Parks have established a commanding lead over community centres as the race to prepare Centennial projects marking Canada's 100th birthday enters the home stretch. New municipal buildings and extensions hold down third place in popularity among more than 500 projects so far approved in Ontario with only a year to go.

Overall, the emphasis is on relaxation. More than half the projects are of a recreational nature, including swimming pools, beach improvements and arenas as well as the parks and community centres. Projects approved in Ontario to date exceed $22,000,000.

Up to the present, 90 per cent of the communities in the province have applied for government grants toward Centennial works, many of which are still being processed. Approved projects are granted a one dollar per capita subsidy from both the provincial and federal governments. Indian bands are also eligible for Centennial grants but none have yet been announced in Ontario.

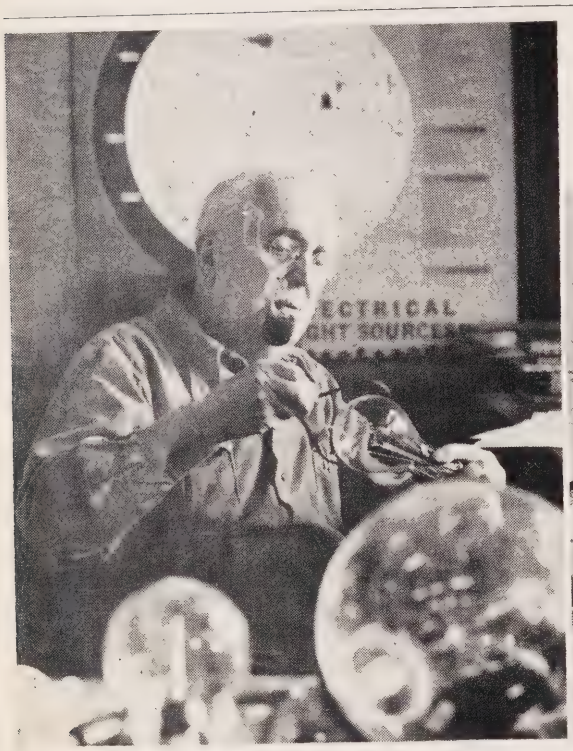
Individual Centennial undertakings range in size from a $500 park in the Village of Magnetawan to a $1,184,000 arena and recreation centre for North York Township. A multi-purpose $1,240,000 recreation building is a joint project by Brantford, Paris and five area townships.

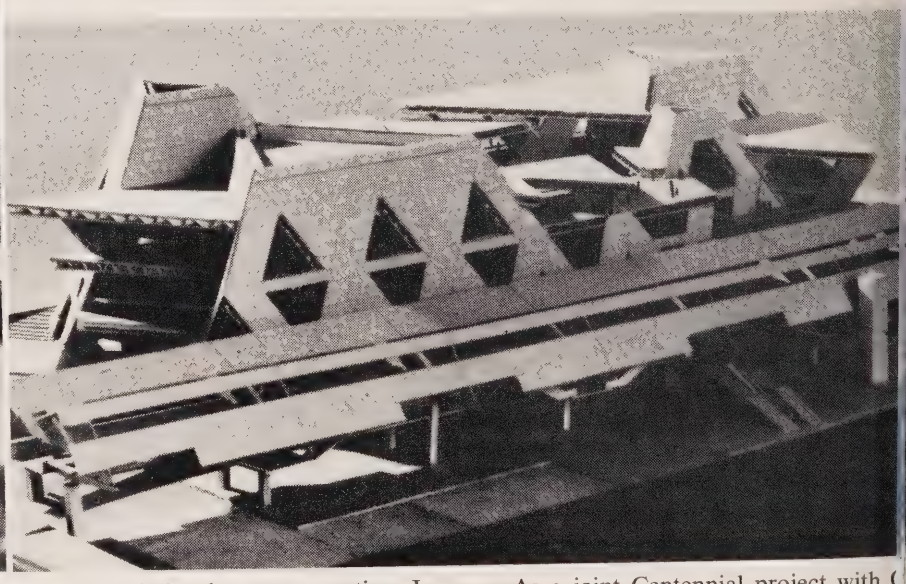
Peterborough, Sioux Lookout and Midland are among at least 20 Ontario communities to choose museums as their Centennial projects. Others, including Elgin County, Tillsonburg, East York and Oro Township, will restore historical buildings — many of which are older than Canada itself. Eight municipalities will publish histories for distribution to all residents.

Among the more unusual projects is the $50,000 interdenominational chapel the United Counties of Stormont, Dundas and Glengarry

*Volunteers are hard at work refurbishing electrical artifacts for Hydro's historic collection. Displays will be made available to utilities for Centennial programs.*

*Located at a f point of the Expo 67 the "Man the Produ pavilion will contain "Resou of Man" section sponsored jointly by On Hydro and Hydro-Qu*



will build at a home for the aged. Hamilton will spend $465,000 to restore Dundurn Castle and Owen Sound has settled on an art gallery and museum. Thamesville will install a tower clock in its town hall while nearby Port Stanley will add a thermometer as well as a clock to its municipal building.

The County of Haliburton will build a senior citizens home, Orangeville has included a children's library, Niagara Falls will start a civic square development and Fort William will have a conservatory.

Aside from such corporeal projects, most Ontario communities are planning special ceremonies and many have beautification and improvement programs incorporated in their Centennial plans.

And for those communities, industries and businesses still at a loss about what to do for the big birthday party, the Canadian Electrical Manufacturers' Association and the Canadian Electrical Association have a suggestion. In a joint promotion they are urging malingerers to "light up" for the Centennial.

Their appeal draws attention to the opportunities 1967 represents, either to add outdoor lighting to Centennial projects or to floodlight buildings, playing fields, parking areas and the like as the main feature. The promotion is being initiated at the local level by the municipal utilities who are being asked to approach key executives and civic officials.

Hydro itself will be much to the fore in Centennial celebrations with projects underway at several levels. Portable displays of electrical equipment from the Commission's historic collection will be made available to the utilities for use in connection with community programs. The displays will feature themes such as the development of lamps and lighting over the years, the evolution of household appliances and the story of generators and motors.

As a joint Centennial project with ( Hydro, the municipal electrical utiliti open the Hydro Hall of Memory at N Falls, in February. "Public Power People" will be the central theme of the 000 project which will occupy some square-feet in the foyer of the Sir Ada No. 1 generating station.

As well as depicting early discov developing and transmitting electrical the display will pay tribute to the m foresaw electricity's importance to the e of the province, and insisted that this be developed for the people rather t profit.

Other features will include a hug portraying the history of electric powe tario, and plaques recording the n presidents of the Ontario Municipal Association, the Association of M Electrical Utilities, and the chairmen a

*Ontario Hydro will also participate in the pavilion of the Province of Ontario. Of vinyl and fibreglass construction over a light frame, the pavilion will cost about $5 million and contain a 350-seat theatre.*

*As a joint Centennial project with Ontario Hydro, the municipal utilities are establishing a Hall of Memory at Niagara. It will outline the development of public electric power in the province.*






ssioners of Ontario Hydro. An illuminated ll map will show the growth of the muni- al system over the years and the develop- nt of the Hydro transmission grid.

Ontario visitors to the Hall will be able to ate the role of their communities in the dro partnership by referring to histories of 358 individual municipal electric utilities ich will be available. The histories are cur- tly being written by the utilities.

Photo and art panels in the Hall will record nts from the 1860s to the opening in 1921 he Sir Adam Beck No. 1 plant — the first jor station built by Hydro. Other panels will onologically highlight key events in the y of public power and its people from 1 to the present.

Artifacts such as early lamps and electric ors will also be displayed and showcases contain other articles of historic interest uding clothing and personal belongings of Sir Adam Beck — often called the "Father of Hydro".

Ontario Hydro's major contribution to Canada's Centennial program will be at Expo 67, the World Exhibition at Montreal. Ontario Hydro and Hydro-Quebec will share equally in a $1,500,000 sponsorship of the "Resources of Man" section of the "Man the Producer" pavilion.

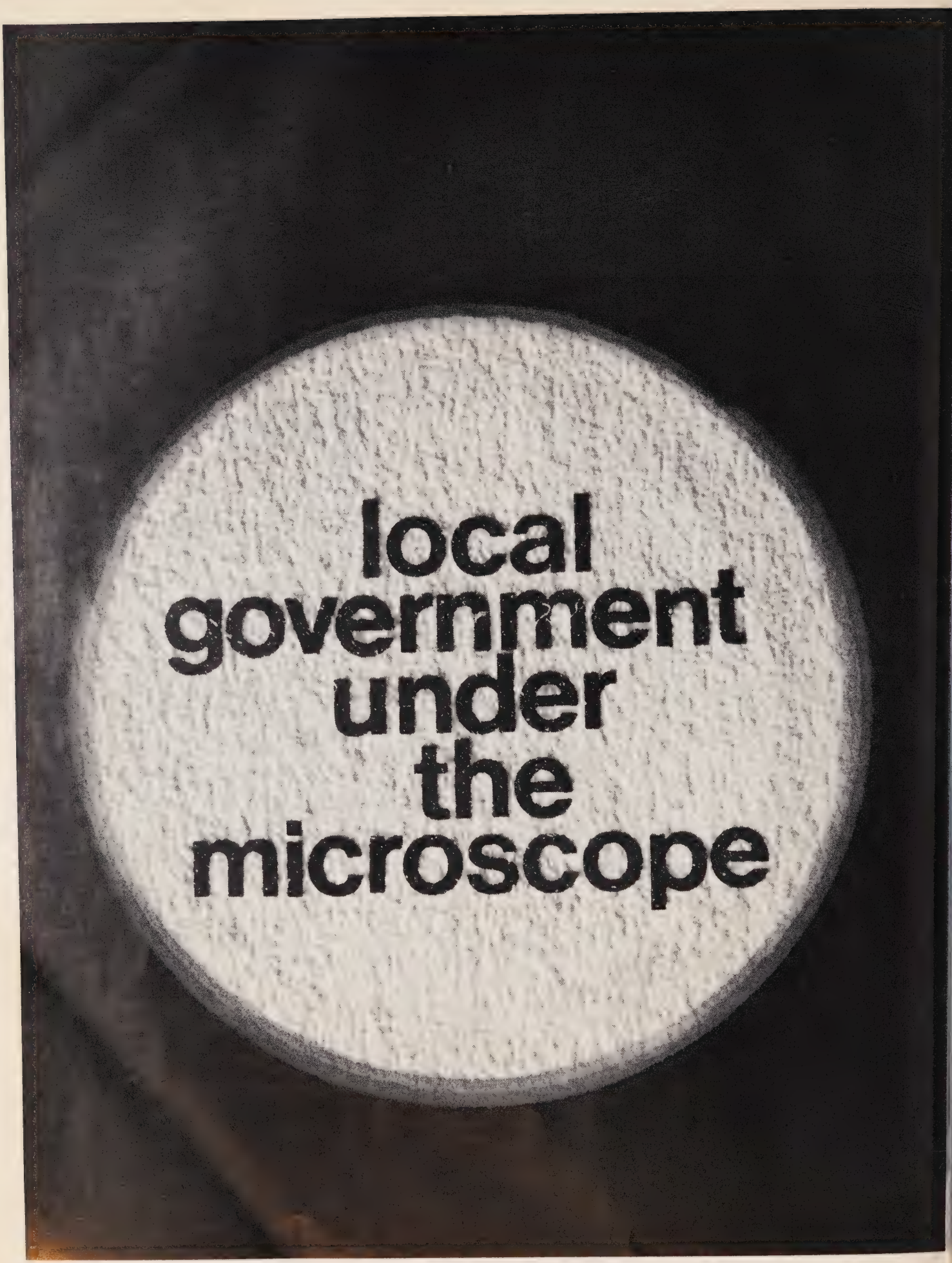
The exhibit will show the various sources of electric energy in their present state of development and will suggest their role in days to come. The various themes will be depicted by audio-visual projections. In a separate exhibit, Hydro-Quebec will use closed circuit color TV to enable Expo visitors to watch construction at Quebec's huge Manicouagan project in the northeastern part of the province.

Ontario Hydro will also participate in the provincial government's Expo exhibits and will focus attention on the Ontario Pavilion with a spectacular lighting display.

Another Centennial project in which Hydro anticipates being involved is the provincial government's Ontario Centre of Science and Technology to be located in Don Mills. The centre will be strongly oriented towards the educational and will make use of the latest concepts of display design.

Discussions are currently underway on how best to portray the part electricity plays as a leading force in advanced industrial technology. Henry J. Sissons, Ontario Hydro's assistant general manager, Services, is on the board of directors of this project.

All in all, Canada's 100th birthday party shapes up as a worthy climax to a century of progress. Hydro regards the Centennial as a unique opportunity to tell the story of electricity in the province and to acquaint the citizens with its importance in their history and contemporary life. □


local
government
under
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microscope

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ticle outlines some
the problems and
lutions being explored
Ontario.

by PAUL CHISHOLM

Established in the horse and buggy era more than a century ago, Ontario's system of local government is galloping into difficulties in serving the needs of the jet age. Municipalities, including counties, are increasingly calling for assistance to cope with mounting problems of urban expansion in planning, financing the growing need for services, pollution control, land annexation and overall administration. Difficulties in these and other areas result primarily from rapid post-war growth and the trend to urbanization.

Throughout Ontario it is becoming apparent that the combination of population growth and urbanization, coupled with economic prosperity and futuristic thinking, has created a need for better organized planning and a demand for community services never envisioned by the authors of the province's 1849-based municipal legislation. Not only have cities developed a new vigor but population has spilled over into rural areas which are neither financially nor politically equipped to deal with the resulting problems.

The division of farms into small parcels and the settlement of city-oriented people in suburban and rural areas compelled the introduction of subdivision control and community planning. As the geographical areas of urban communities outgrew the boundaries of the political units, a sharp increase in the number of applications for annexation and amalgamation took place in an attempt to correct the imbalance. This created other problems.

Enlarged units of administration are among the measures frequently suggested as the basis for an overall solution. This was one of the recommendations put forward a year ago after a study by the Ontario Legislature's Select Committee on Municipal Affairs. The committee shared the view voiced in other quarters that the county should serve as a base for enlarged regional government. Others, however, suggest that the county areas are unsuitable because they reflect political rather than economic boundaries.

While the term "regional government" is foggily imprecise, it implies a relatively large area in which area-wide functions and services such as finance, engineering, planning, and assessment are performed by an overall government. At the same time, many services of a purely local nature may continue to be performed by local entities.

So pressing have been the problems confronting many municipalities and counties that they have requested the Department of Municipal Affairs to launch studies into the entire local government structure of their regions.

As far back as the late 1940's municipalities in the Toronto area called for a study of their inter-relationships and planning problems which led to the establishment of Metropolitan Toronto by the Provincial Government in 1953. The tailor-made Toronto formula attracted wide attention because it represented the first federated local government set-up in the Western World.

Waterloo County, nibbled away at through annexations by several population centres within its boundaries, was also the subject of a study by the department's community planning branch. This led to last year's designation of the county, plus the cities of Galt, Kitchener and Waterloo, as a joint planning area — a milestone in the history of local planning organization in the province.

More recent studies are being overseen by Dr. L. R. Cumming, Q.C., former deputy minister of the Municipal Affairs Department and full-time consultant to the Minister on matters of local government policy. The first of these studies — on the Ottawa area — has been completed, while others are underway in Peel-Halton counties, the Lakehead area and Lincoln-Welland counties.

Future studies may be conducted in the Brantford-Brant area, the



*nlarged units of administration e among measures often suggested r more effective local government. stablishment of Metropolitan Toronto 1953 attracted wide attention it was the first federated unicipal system set up in the Western orld. Metro council is shown in ssion at new City Hall.*

Hamilton, London- Middlesex area, Muskoka district and Ontario and Wentworth counties.

"Requests for these studies come from the municipalities or counties themselves," explains Dr. Cumming, who is a former chairman of the Ontario Municipal Board and one-time solicitor for the City of Windsor. "A majority of local governments in any area must be favorable to the idea and the area must be a significant one economically, socially and geographically before a study will be sanctioned".

Cost of the studies, which take a minimum of one year to complete, run high. Municipalities must agree to pay half the $75,000 to $80,000 total cost.

Consultants appointed by the province to undertake these studies usually have a background in political science, economics or municipal administration. They and their staffs, usually comprising two researchers and office help, range through the area under review to gather pertinent data, probe inter-municipal problems and receive briefs from interested organizations and individuals.

Methods used in the investigations are left to the discretion of the commissioners. Firm recommendations contained in a final report are later submitted to the Minister.

"Neither the government nor the municipalities are bound by the findings of a study," Dr. Cumming explains. "It is up to the government to determine what action — if any — will be taken. Section 91 of the British North America Act clearly rests responsibility for local government organization with the province."

Dr. Cumming emphasizes that local government authorities — official or otherwise — are a long way from the solutions to inter-municipal problems. Nor do they expect to find a catch-all formula for the entire province.

"The surveys are an attempt to bring things into focus and the emphasis is on the word 'study'," he says. "Municipal problems vary from one end of the province to the other. The problems of administering the Lakehead district, for instance, have nothing in common with the peculiarities of Muskoka which is faced with the needs of a growing summer and weekend population and has little industrial assessment to share the cost of providing essential services. The administration of Metropolitan Toronto will obviously not serve as a model for overcoming problems of a predominantly rural area.

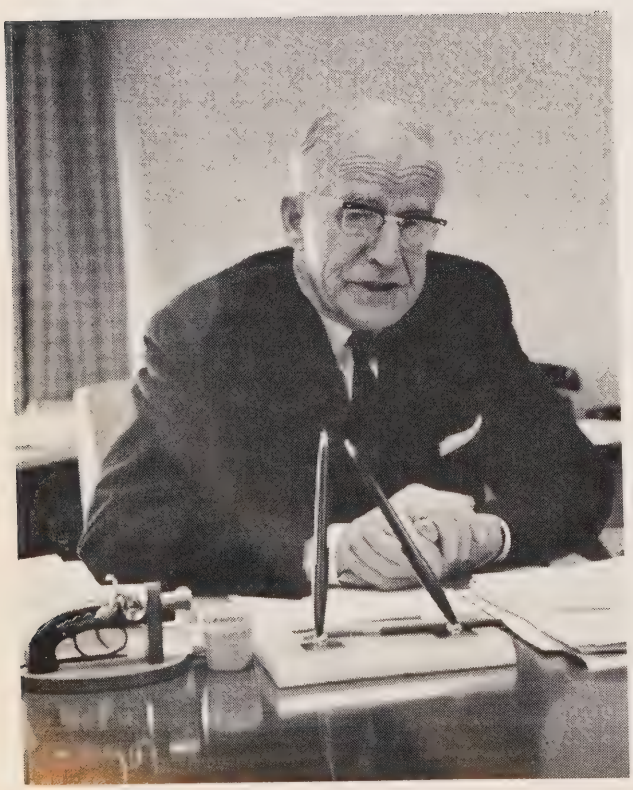
"Far from starting with pre-conceived ideas about changes in local government, the study consultants seek the widest possible views on the existing municipal functions in an area, and take every step to have representation from all quarters", Dr. Cumming says. "Municipalities are becoming increasingly aware of their problems and apprehensive of the future. They are seeking new ideas and looking for leadership in guiding them into tomorrow. At the same time, it is obvious that none of them want a new system rammed down their throats. The answers will only be found in a spirit of co-operation."

Dr. Cumming says that problems of inter-municipal relationships and the suitability of long established boundaries are international. "Similar studies have been conducted or are underway in every province of Canada," he says, "with the possible exception of Newfoundland, as well as in Britain and the U.S. We are all fishing in the same pool for the answers."

The Ford Motor Company's proposed assembly plant at Talbotville, mid-way between London and St. Thomas, creates inter-municipal problems typical of those being faced today. Located in Southwold Township, it will represent a huge chunk of industrial assessment. At the same time, it appears likely to require a multi-million dollar water pipeline and will probably permanently disrupt the development patterns of St. Thomas and London because of its magnetic attraction for people and ancilliary industry. In essence, the effects of this industrial development will be felt in at least two cities, two counties and a dozen townships — none of which has any power to deal with the over-all aspects of the situation.

In general, post-war expansion throughout the province has

*Regional studies of municipal government are being overseen by Dr. L. R. Cumming, Q.C., former deputy minister of Municipal Affairs. "Neither the government nor the municipalities are bound by the findings of a study," he emphasizes. "It is up to the government to determine what action, if any, will be taken."*



resulted in major population centres literally bursting at the seams. Dormitory suburbs sprang up in adjacent countryside and raw land which once separated municipalities has in many instances been developed to a point where boundaries are indistinguishable to the eye. Among the problems attending this growth are inequality of taxes, provision of utility services, road financing and water supply.

While annexation may solve some of these problems it can also add to the difficulties of other municipalities in the area, John Pearson, co-ordinator of municipal services, Ontario Department of Municipal Affairs, points out.

"Annexed areas are usually urban with high assessment, and represent a dollar and cents loss to the township or county from which the land is transferred," he says. "Assessment for rural roads administered by the county can also be severely cut back.

"The city has new problems too. The rate of growth may be greater than it can finance without a tremendous tax hike. Services may have to be provided for say, 1000 new houses, but in the opinion of the Ontario Water Resources Commission, which approves all expenditures on sewerage facilities and water supply, the long-term may indicate that services will be needed for three times as many homes. This is the type of problem which has arisen in the Ottawa area which is expanding in several sections at the same time."

The Oakville-Burlington-Hamilton region is a striking example of municipalities expanding into the open spaces which once separated them. Problems arising in such instances include industrial-commerc zoned land abutting on residential. Higher assessment for township land resulting from increasing development causes farmers to sell their properties.

Using land to the best advantage beyond the immediate needs of a individual municipality is another serious problem when planning is confined to the purely local level. Perhaps the best example of this is the Niagara Peninsula, where industry increasingly sprawls across some of the best fruit growing land in the world.

Several municipal units of a regional nature are, however, emerging in the province in a rather hodge-podge fashion. Each of more than 24 conservation authorities, for instance, operates within its own watershed. Each has a program of flood control, water and land conservation and recreation which are subsidized by the federal provincial and municipal authorities.

Joint inter-municipal planning groups are another example, and along with industrial and other representatives, most municipalities throughout the province belong to regional development association These organizations are primarily concerned with promoting and developing their respective areas as good places in which to work, play and live.

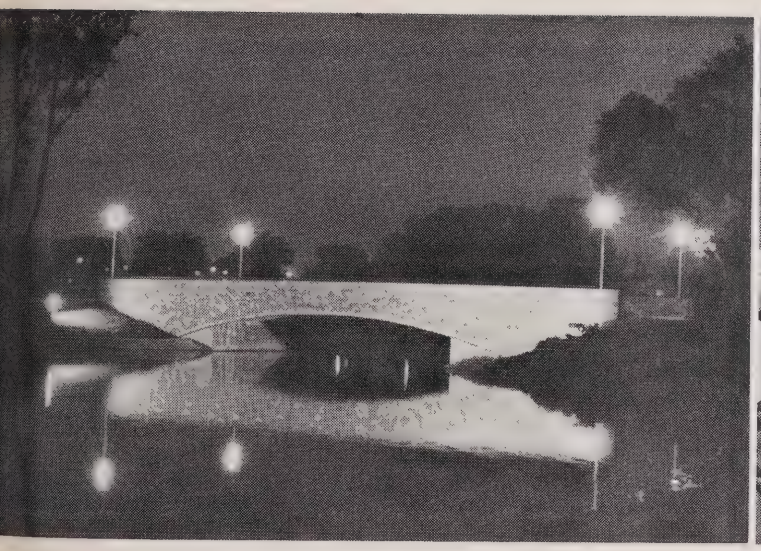
On the Ontario rural scene, the little red schoolhouse is an obviou casualty of broadened local administration. Traversing roads open year-round, buses bring students from a wide radius to consolidated multi-roomed schools equipped with up-to-date educational aids. Where once there was a multitude of education boards, one serves the entire area.

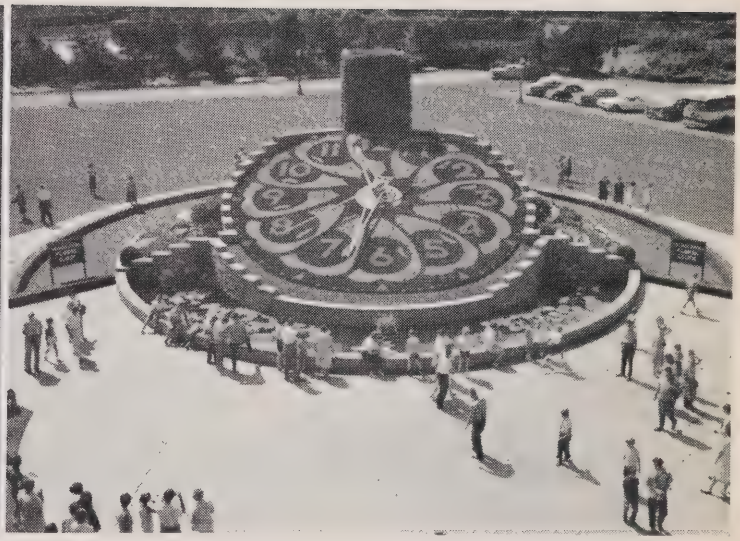
Multi-purpose or regional government developed from existing structure appears at present to offer the best solution to the municipal problems of boundaries, legal powers and fiscal resour according to the Minister of Municipal Affairs, J. W. Spooner. He believes regional government would reduce the discrepancy i size and nature of services provided by more than 900 local government units and help resolve the difficulties of all concerne administering programs to uniform standards.

"Because there is no forum for the exchange of ideas, ideals and headaches, and because of the traditional differences in the background of county and city officials, too often an invisible barr has developed," the Municipal Affairs Minister observes.

He says it is imperative that all levels of local government exerc leadership in developing an effective system of regional governme Change is necessary not only in the light of today's needs, he belie but to allow planning for the future.

*Our growing concern for the aesthetics of our environment is shared by utilities and councils. Photos show floodlit bridge in a Stratford park and Ontario Hydro's renowned floral clock at Niagara.*





**all things bright and beautiful** Contrary to some opinion, the electrical utilities of Ontario do care about looks. Progress toward improved appearance has been steady and it is being carried out without prejudice to the supply of power at low cost.

auty was the least of their problems in early days of municipal development but tario communities are paying ever-increas- attention to the aesthetic as they come of e.

While volunteer clean-ups, tree plantings d paint-a-town projects are becoming the der of the day, more and more municipalities ve introduced bylaws with an eye to the thetic. These range from making under- und electrical distribution mandatory in v developments to controls on the placing advertising billboards and signs. Other areas ng examined run the gamut from gas station ign to the location of vendor stands.

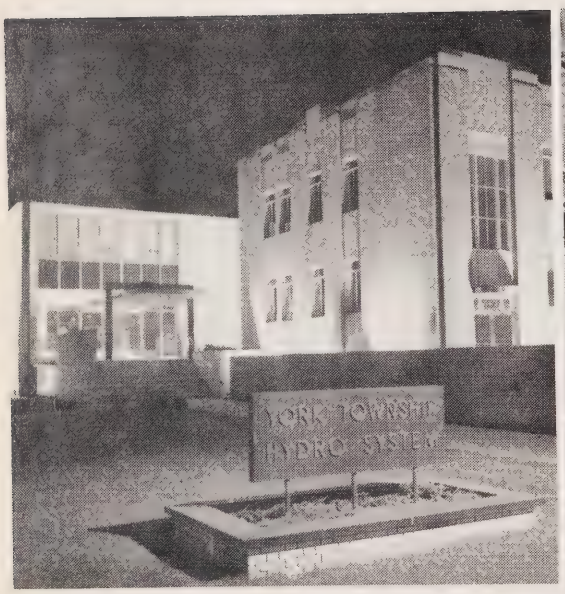
Municipal electrical utilities, deeply involved by the very nature of their operations, are shouldering their share of the responsibility for the appearance of urban Ontario. Concentrating on the distribution of their product, they are directing a two-pronged attack against unnecessary ugliness. By adopting underground distribution as standard practice where economically feasible, they are progressively eliminating unsightly wooden poles festooned with wires. Where underground costs are prohibitive, they are concentrating on new designs to improve both the appearance and efficiency of overhead systems.

Unlike much of Europe, which has had underground distribution from the start, North America allowed the aesthetic to lose out in the face of impatient urban and industrial growth. But attitudes are changing. As suggested by the costly landscaping the public insists on for new housing areas, the affluent society has a growing appreciation of aesthetic values.

Cost, of course, is the factor deterring unlimited development of underground electrical systems — particularly in replacing existing systems in established areas. As with any other commodity or facility, additional cost must be borne ultimately by the customer.

"Depending upon a number of factors, underground distribution can cost one-and-a-half to five times as much as an equivalent overhead system," states John A. Torrance,

*Utility offices and servi centres are frequently the pri of their communities. A many utilities have long-ran programs for replaci overhead lines in downtov areas with underground frequently in conjunction wi redevelopment projec*






chief engineer of Etobicoke Hydro—a municipality with considerable underground experience. "A utility must strive for a system that, consistent with economy, will give a high degree of service continuity, is capable of ready maintenance, is safe both to the public and to utility employees and can supply present and future loads without expensive modification."

New techniques, equipment and practices — not to mention the shared experience of close to 100 utilities involved to varying degrees in underground distribution — are helping reduce the cost of such systems.

Another cost factor which must be considered is the investment in existing lines. It would be impossible to write off this multi-million dollar investment in a crash program of underground distribution without jeopardizing utility financing and seriously affecting the cost of power.

Centres to the forefront in underground distribution include Metropolitan Toronto, Hamilton, London, Niagara Falls and St. Catharines. In Toronto the city subsidizes the cost of underground construction in the interest of aesthetics. Approximately 60 per cent of power supplied by Toronto Hydro is delivered by underground systems. A similar subsidy is being considered in Hamilton where 72 per cent of the power is supplied by underground facilities. Kingston, Stratford, Ottawa, Toronto and Peterborough are among the many cities developing underground on their main streets as integral parts of redevelopment plans.

Among changes in the design and construction of overhead systems to improve appearance are closer spacing of conductors, spun cables which eliminate cross arms, and the use of concrete poles. Welland, Oakville, London, and the Toronto area are among the communities which have adopted some of these techniques.

In the interest of appearance many municipalities have also adopted rear-lot line construction, and new methods have been dev for installing smaller-size pole transforme

Lighting is another area where utilities striving to improve the appearance of the munity. As mercury vapor and fluores lamps raise outdoor lighting levels to Ill nating Engineering Society standards, higher, many are turning attention to mental and decorative lighting projects.

Guelph, Stratford, Niagara Falls and don are among the many cities with long lighting programs calculated to show that in the right places makes the day last lo Use of better designed luminaires goes in hand with redevelopment of electrica tribution in striving for good illuminati well as good looks during the day.

Trees along power line right-of-way another continuing utility responsibility can enhance the beauty of urban streets a as ensure reliable electrical service. Utiliti working more closely with their municip

*Utility substations are designed to blend with neighboring structures as economically as possible. New subdivisions in many Ontario municipalities are now being serviced with underground Hydro and telephone wires.*





tree removal, planting and pruning operaıs. The experience of Ontario Hydro's restry Department is frequently drawn upon instructing linemen, selecting species which l not interfere with utility services, and dance in the general care of trees.

Galt PUC is a good example of a utility which eavily involved in the planting and care of es. Undertaking this work on behalf of the , the utility plants between 300 and 400 es annually, as well as being responsible for nming and spraying.

Another area in which the utilities have been e to combine the aesthetic with the funcnal is in the architecture of their office and vice buildings. An outward manifestation of aggressive and efficient people who use m, these buildings are frequently the strucal pride of their municipalities. New utility ldings, including substations and work tres, are designed to harmonize with their roundings. Attention to landscaping proclaims Hydro's pride and concern with being good community neighbors.

Within the framework of its mandate — the supply and production of low-cost electricity, Ontario Hydro also pays close attention to the appearance of its properties and the conservation of natural resources.

In harnessing rivers to produce power, Hydro makes every effort to preserve the natural beauty of areas affected by construction. Conservation is an important feature of the vast maintenance programs Hydro conducts on lands it necessarily controls for power development sites, transformer stations, power line rights-of-way and other works.

A continuous multi-million dollar air pollution control program is carried out to reduce stack emission to a minimum at coal-burning stations.

Careful trimming by trained Hydro forestry crews on a planned, year-around basis reduces tree removals. Since 1932, nearly 2,000,000 trees have been planted on Hydro-owned land. These reduce site maintenance work, efface scars left by construction forces and grow into valuable stands of timber at which time selected mature trees are sold through controlled cutting.

Special emphasis is given to landscaping at such locations as Queenston and the St. Lawrence developments which are popular tourist attractions. In co-operation with U.S. authorities, large sums of money have been spent in excavating the Niagara River above the falls and in building a control structure. This work not only improved water distribution for power production and enhanced the beauty of the falls but also reduced erosion.

The floral clock at Queenston, colored lighting at Niagara Falls and the observation deck at the R. H. Saunders-St. Lawrence generating station are further examples of Hydro's policy of conserving the beauty of Ontario and improving on it where possible. □



# breakfast with Sir Adam

Few Hydro pioneers can hold a candle
Dr. E. V. Buchanan of London for breadth
experience and length of interest in all aspe
of the electrical utility industry. And if th
could they wouldn't dare because he's still "
electric" and regards any other form of illu
ination as passe.

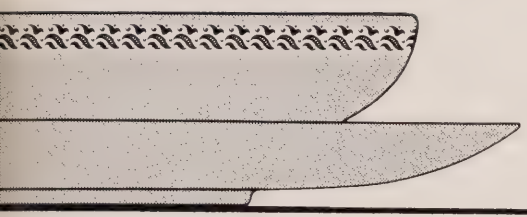
Dr. Edward Victor Buchanan, or "E. V.'
he is affectionately known to his host of frie
in Hydro circles, was with Hydro from 1
and general manager of the London Pu
Utilities Commission from 1914 until
retirement in 1952. But even before, and l
after those eventful 42 years, he has kept
on developments at London and at Ont
Hydro which is celebrating its 60th anni
sary this year.

Like most died-in-the-wool Hydro folk,
Buchanan takes a keen interest in the er
Hydro family — as evidenced by the ac
role he played in the affairs of the Associa
of Municipal Electrical Utilities during
working years. He was its president, in 1
18, and his contributions to the utility
were recognized in 1950 when Ontario H
named one of its most important transfo
stations in his honor. Further recognition c
to him in 1958 when he received an hono
doctorate degree from the University
Western Ontario.

Beyond this, Dr. Buchanan had a ce
geographical advantage going for him w
adds a fillip to his reminiscences. He
across the road from Sir Adam Beck in
don and became his friend, confidant
Sunday morning breakfast partner.

In a recent interview, the keen-eyed
Buchanan demonstrated both a fine me
and a well-developed sense of humor i
counting his relationship with the "Fath
Hydro".

"Especially after Lady Beck's dea
1921", he mused, "Sir Adam used to pi
the telephone of a Sunday morning
command — 'get on over here, breakfast
the sideboard'. I'd hurry over and he



ting impatiently to begin — talking, not ng. I always felt he was talking at me, not ne, somehow or other."

Asked what Sir Adam was like as a man, Buchanan replied: "As an individual, he a man of strong opinions and little humor. act, he was a dictator. But if he hadn't been, e would be no Hydro as we know it today. I always held great admiration for Sir m even though he was inclined to ride ghshod over men. But he always liked and ected anyone who stood up to him. For mple, he would often say I didn't know t I was talking about when I made a sug- ion at our Sunday morning meetings. Then Monday, Fred Gaby, Ontario Hydro's chief neer, would call and ask for more informa- on that suggestion I had made to Sir m the day before."

r Adam and Lady Becks' favorite project the founding of the Queen Alexandra atorium in neighboring Byron. Following kfast on Sundays, Sir Adam would often the hospital, make his way to the boiler- se, and peel off his coat to work on the pment. One particular Sunday, Dr. Buch- accompanied him. Finding a faulty pump, men tried to repair it, but without success. He glared at me accusingly", Dr. Buchanan lls "and exclaimed: 'You're a hell of an neer, Buchanan.' I replied with some in- ation, I may be a hell of a mechanic, Sir m, but I'm a good engineer."

nd Dr. Buchanan vividly recalls Christmas 1910, a crisp and silent night broken by the sound of Sir Adam's horse-drawn r with Sir Adam at the reins. He had nised the people of Byron power by Christ- day and the London line gang was on its to keep the pledge. That night they super- the stringing of the last lines which ght Hydro to Byron on schedule. It was Buchanan's most memorable Christmas is first in Canada.

hen Dr. Buchanan, a graduate engineer, ed in Toronto from his native Scotland, he was hired by H. J. Glaubitz, a consulting engineer to Ontario Hydro. He worked with the Hydro staff in the Continental Life Assurance building at Bay and Richmond.

"I started off on the drawing board in those offices on the fourth floor, and I recall at that time there were about 25-30 employees working for Hydro. I remember A. H. McBride, Fred Gaby, Harry Acres, Ed Brandon, H. C. Don Carlos, Pete Yates and Jim Wilson were all working there then."

Soon after, Sir Adam sent Mr. Glaubitz to layout a well water supply line for London, and Dr. Buchanan went along as resident engineer. "You must remember," says Dr. Buchanan, "that Sir Adam was mayor of London before he became chairman of Ontario Hydro, and he still had a vast interest in his community. He was violently opposed to the proposal to pump water from the Thames for drinking purposes. Sir Adam urged that artesian well water be used and guaranteed $100,000 for the project. The council put the vote to the people and the well water project was approved."

After the water system was completed, Mr. Glaubitz was appointed manager of the PUC. "And I was then on the city payroll," says Dr. Buchanan. "However, during World War I, feeling ran high against a German as PUC manager and Mr. Glaubitz was forced to leave. So I was appointed general manager of the London PUC."

And during Dr. Buchanan's long association with the utility, London PUC became known across the province for its initiative and aggressiveness in promoting domestic use of electricity. London was the first Hydro utility to set up an appliance retail department. And apparently it was a case of necessity.

"I can remember approaching three electrical dealers in the city with the idea of having them promote electric appliances," says Dr. Buchanan. "And I can distinctly recall them turning me down, for they didn't want to get involved with 'novelties' like irons and toasters. So we decided to sell the appliances ourselves. We rounded up some salesmen and got out the horses and buggies. We loaded them down with electric irons and went door-to-door giving every lady in London an iron to try on a week's trial. We sold thousands that way."

And again, as Dr. Buchanan recalls it, London PUC was instrumental in the design and promotion of the first electric range manufactured in Canada. "When the first electric stoves came out, they were imported from the United States. The frames were wooden and they didn't prove very satisfactory. McClary Stove Company in London, with assistance from our engineers, designed the first electric range manufactured in Canada, which incidentally sold for $45.

"No sooner did it appear on the market than we began getting complaints about installation costs. Contractors apparently were charging $80 to hook-up the stove. So we went into the wiring business and sold the range and the installation service for $65."

Price aside, the utility still had trouble at first in selling electric cooking. The commission, convinced that demonstration was the best promotional method, hired a cook and set up a small dining room at the utility offices. They invited groups of prominent London women to lunch and proceeded to sell them on electric cooking by offering food prepared on the ranges.

"I was always optimistic that we could build up the domestic market for electricity," Dr. Buchanan says. "Private companies at this time ignored this area entirely and concentrated on industrial users.

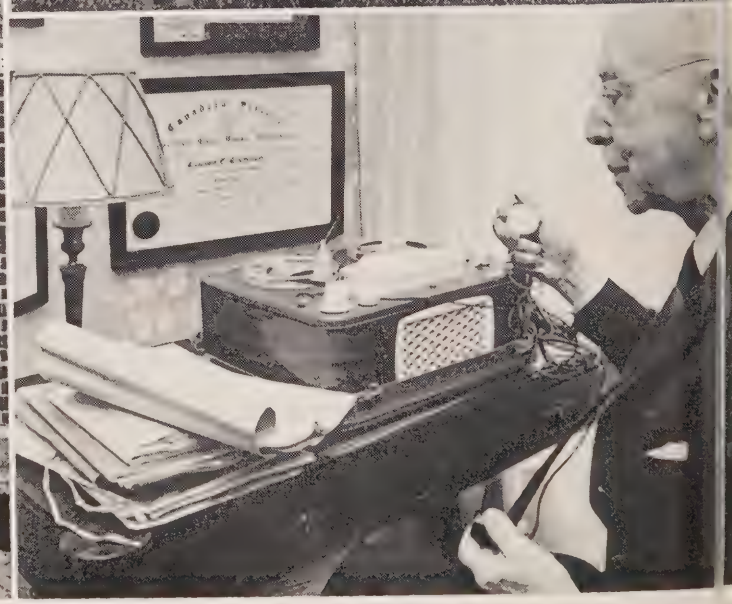
When queried on what specific job executed by the London PUC gave him the greatest pleasure, he replied: "Aside from introducing people to the advantages of electricity, I would say building one of the first public golf courses in Canada."

This may seem like an odd answer, but the London utility has long been in the parks and recreation business as well as water, electricity

*Many a Sunday morning Dr. E. V. Buchanan strolled up Headley estate driveway for breakfast with Sir Adam Beck. Old photo shows him with Sir Adam, second from left, and members of London Rotary Club at Niagara in 1921. He uses tape recorder in preparing London PUC history for Hydro Hall of Memory.*







and transportation. "At one time, our water works department had more parks to manage than the city so council turned the entire parks operation over to us. Around 1924 there was a public outcry for golf courses that anyone could use, not just for the elite. We had several hundred acres around Spring Bank and thought this might be suitable for a golf course," he recalls.

"Yes, I think that project gave me as much satisfaction as any undertaken by the utility during my time," replies the dapper, 79-year-old man who maintains he's never had a major disappointment in his life. "Everything just seemed to succeed."

And although he's earned his pipe, slippers and rocking chair, he has no time for t
We asked him about the tape recorde
could see on his desk. "Oh, that," he repl
an off-hand way. "I'm preparing a histo
the London PUC for Hydro's Centennial
of Memory."

It would be difficult to find anyone
qualified for the job.

*Top three in secondary school impromptu contest, left to right: Carol Pickles, 17, Scarborough, third; Michael Raymond, 18, Aurora, first; and Norman Fetterley, 16, Niagara Falls, second.*

*Ontario Hydro Chairman George E. Gathercole is shown making the presentations to secondary school prepared speech winners. From left are: Marc Connors, 16, Ottawa, the winner; Mr. Gathercole; Andrew Pirie, 15, Goderich, third; Nancy Hermiston, 15, Campbellford, second.*

*Elementary school winners, left to right, are: David Austin, 12, Woodville, third; Christine Brooks, 13, Toronto, first; and Anne Balfe, 14, North Bay, second.*







young orators display poise and confidence in outdoing 300,000 contestants

# best in the province

n-year-old Marc Connors and 14-year-nne Balfe are both confident and fluent speakers. They also have a common life.

rc, a student at St. Patrick's College High l, Ottawa, and the son of a naval captain, to start training as a Roman Catholic next year. Anne, who attends Mother ide Separate School, North Bay, wants ome a nun.

h proved their ability as orators in the of the Ontario public speaking contest onto recently. Marc won the secondary prepared section while Anne finished second in the elementary school class.

She was topped by 13-year-old redheaded Christine Brooks, of Victoria Village Public School, Toronto. Christine's topic: "On being a readhead." First among the secondary school off-the-cuff speakers was an 18-year-old Aurora student, Michael Raymond.

Trophies and cheques for $100, $75 and $50 were presented to first, second and third in the two secondary school classes. Elementary school winners received trophies and cheques for $75, $50 and $25.

Prizes for the finals were presented by Ontario Hydro, which sponsors the contest jointly each year with the Ontario School Trustees' and Ratepayers' Association. Local utilities and districts of the Ontario Municipal Electric Association participate at the various local levels of the contest.

Altogether, more than 300,000 elementary and secondary school students spoke during the event.

Making the presentations, Ontario Hydro Chairman George E. Gathercole told school representatives: "I would like to express Hydro's appreciation at being able to participate in this contest. It is a privilege to work with these youngsters and help develop the truly remarkable talents demonstrated here tonight."

Many of the 42 finalists spent the day after the finals touring Niagara Falls as the guests of Hydro. □

# only one hat is straw

by LOIS LANE

## hydro's farm reps wear many hats in helping farmers get the most out of electricity

"How yuh gonna keep them down on the farm after they've seen Paree"?

The worrisome question raised by this World War I song can be readily applied to Ontario these days. Just substitute any large center like Toronto, Hamilton, Windsor or London for the French capital. These are just some of the cities that are attracting hundreds of farm workers with their bustling industries, high wages and jobs that offer free weekends.

Lack of manual labor, however, is just one of the reasons Ontario farmers are borrowing a page from industry and turning to mechanization and automation. Farming is no longer a family occupation that lends itself to casual, haphazard management based on practices acceptable a generation ago. It is now a business demanding heavy investment and requiring as many important decisions as commerce or industry.

"Marketing method changes have also forced the farmer to alter and improve his agricultural techniques," says John Moles, manager of Ontario Hydro's Farm Sales Department. "About 20 years ago, there were thousands of small groceries spread over the province which would buy directly from the farmer. But this pattern is disappearing with the advent of large chain stores whose purchasing is done in mammoth quantities from a central buying office. This marketing innovation is forcing the farmer not only to improve his methods to increase yield, but it is also requiring him to specialize.

"Specialization is leading to the consolidation of smaller farms into larger enterprises in some areas," continues Mr. Moles. "With more and more farmers moving off the land, farm people now account for only 6.6 per cent of the province's total population."

A graduate of the Ontario Agricultural College and a former feed salesman, farmer and producer of the TV program "Country Calendar," Mr. Moles is one of the province's leading farm personalities.

He emphasizes that the decrease in the rural population has been attended by a tremendous increase in efficiency. "Ten years ago one Ontario farmer was feeding himself and 10 others. Today, this same man is feeding himself and 30 people," Mr. Moles points out. "This greatly increased production is mainly due to mechanization, research and land efficiency."

Electrical mechanization has been a leading force. Ninety-five per cent of Ontario farms are electrified. Last year, each farm supplied by Ontario Hydro used an average of 718 kilowatt-hours per month as compared with 360 kilowatt-hours in 1955.

This shift from man to machine has brought Ontario Hydro's farm sales service, and in particular, the 12 farm sales supervisors, to the fore in the agricultural life of the province. Working out of seven regional offices and four area offices, these supervisors serve most of Hydro's farm customers either directly or through area sales representatives.

Almost "jacks-of-all trades", these men are expected to be masters as well. With a sound understanding of electricity, they must have a good grounding in mechanics, architecture and drafting as well as all types of agriculture. Some are agricultural college graduates while others have been farmers themselves or raised on farms. The common denominator is that they were all recruited from within Hy ranks.

One such supervisor, working out of Eastern Regional office in Belleville, is foot-plus Keith Bennett, a graduate agri tural engineer and holder of a Cornell l versity master's degree in agricultural scie Before taking his master's degree, he wa assistant area manger with Hydro. S spoken Mr. Bennett acts as adviser to 12 representatives who handle residential commercial sales as well as rural. Somet he deals with the farmers in his region dire but more often it's a team effort.

For example, John Joyce, sales repres tive at the Napanee Public Utilities Com sion, turns to Keith Bennett frequently advice on farm matters. (Napanee PUC s Ontario Hydro's local rural area as well a town.) John, a former lineman, estimates 45 per cent of his work is with farmers he finds Mr. Bennett's training and experi especially valuable in keeping people like Clayton of Sillsville informed on elec farm developments.

Of nearly 2,000 farms served by the anee utility, the 720-acre spread manage South-African-born Mr. Clayton is one o most progressive. This vast agricultural plex includes the annual production of beef cattle and 1,800 hogs. Over 500 acı this farm, nestled between the shores of Bay and Lake Ontario, is devoted to cor silage. So mechanized and efficient is i Mr. Clayton and three employees mana entire operation.

In the past, Mr. Clayton has looked t tario Hydro sales reps for advice on autc feeding devices and ventilation design f cattle and hog barns. He says: "Righ

*Ivory tower methods have no place in Hydro's Farm Sales organization. Here, Henry Bernhardt, supervisor with Northeastern Region, uses Lorne Conrad's barn at Powassan to explain electric hay drying. Electrical mechanization enables less farmers to feed more people.*



*Farm manager Carl Clayto far left, discusses h production with Keith Benne Eastern Region farm sal supervisor, and John Joyc Napanee PUC sales representativ Annual production at th farm includes 150 beef cat and 1,800 ho*





we are converting a poultry building into a hog barn and both John and Keith have been a great help to me. I had heard about a new way of housing breeding sows and the boys arranged for me to visit an experimental farm north of Toronto to see the scheme in operation."

Scientific-minded Mr. Clayton also oversees the operation of Quinte Started Pullets Limited, a business wherein 24,000 Hyliner pullets are housed in two poultry buildings until they start laying eggs. "When we were building, Keith and John did the floor plan and electrical layouts, while Ross Milne, an agricultural engineer at Hydro's head office, designed the ventilation system," Mr. Clayton recalls. These 200-feet by 40-feet brooding buildings, two-stories high, are operated by one man. An electric hot water circulating system heats the buildings while the feeders and lights are run automatically.

Seated behind a clean-topped desk in his plant-filled office, Mr. Clayton explained why he turns to the Hydro reps when he's building or renovating. "I spend eight to ten hours a day out working on the farm. Each night I try to keep abreast of developments by ing some of the ten magazines I receive month . . . but this is impossible. I find with John or Keith is most helpful. It's job to keep up-to-date with the latest tec advancements and they have the all-imp practical experience."

This kind of confidence is being exp all over the province, whether a farm supervisor is giving advice on the instal of a 200-ampere service to a dairy man amateur horticulturist wishes to exper with cable heat for propagation. But th

*Keith Bennett and Carl Clayton inspect electrical service in new poultry building. Hydro's farm sales group was able to help in designing floor plan, electrical and ventilation systems. Back at the office, Keith reviews sales objectives for 1966 with Fred Furmidge, sales assistant.*






ner side to the farm sales story.

Our men become deeply involved in community affairs as well," says Mr. Moles. "Most supervisors serve on boards of various agricultural fairs and breeder associations. They participate in workshops run at the University of Guelph and at the Ontario Department of Agriculture Schools at Kemptville Ridgetown."

supervisors organize and run a 4-H and Home Electric Club course in their Operated in conjunction with the Department of Agriculture, this course emphasizes the use, safety and economy of electricity to senior members of the club.

While promoting better electrical applications such as environment control equipment, sentinel lighting, adequate service entrance equipment, electrical brooders and electric heating, nearly every member of the Farm Sales Department accepts countless speaking engagements to such groups as the Women's Institute, and other community organizations.

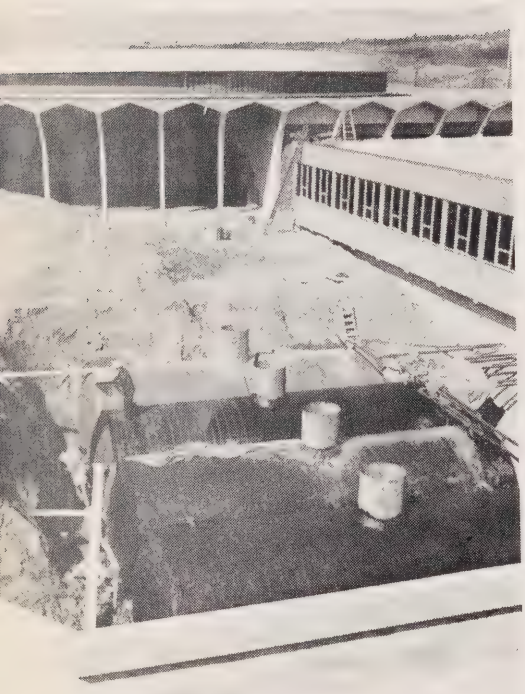
"We feel that in 20 years' time, the average Ontario commercial farm will be so electrified that 2,500 kilowatt-hours a month will be consumed, as compared to the present 718 for all farm customers," says Mr. Moles. "At the same time, there will be only about 62,000 commercial farms in 1986, as compared to 86,000 today."

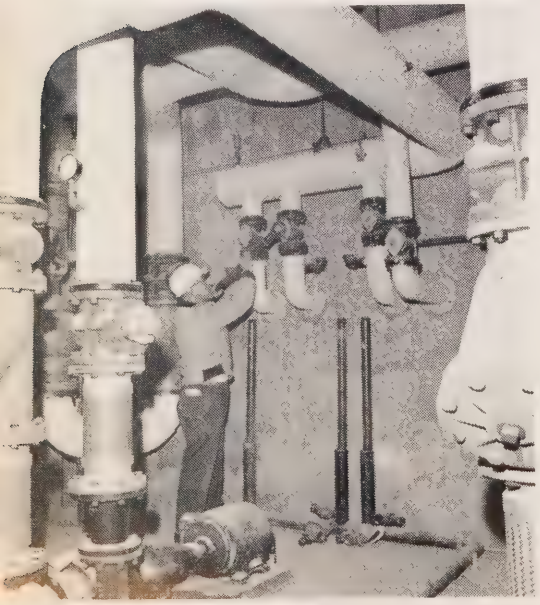
By then, both the farmer and the farm sales representative may need doctorates of agricultural engineering. Even now, in Wisconsin, cows are being fed by computer. An automatic feeder dispenses individual portions to 90 cows, each portion having been calculated by the computer on the basis of the cow's weight and the amount of milk she produces. □

# dundas scores a home run

teamwork pays off in the tough school heating league

by JOAN ALLEN





*Key to the off-peak heating system are these underground hot water storage tanks. Other photo shows Tom Loten, maintenance supervisor, making adjustments in school's heat control centre.*

Statistics are at once a blessing and a curse. Without them, you can't prove a thing — with them, you can prove anything.

Somewhere in between must fall the 1000 per cent batting average claimed, tongue-in-cheek, by the Dundas Public Utilities Commission for electrically heated schools.

As it stands, the statistic is perfectly accurate. But the utility is the first to point out that its perfect record at bat needs a bit of qualifying. It boils down to this. The only two schools to be built in Dundas since the start of the utility's sales promotion program will be heated electrically.

Not in the same league as some of the larger utilities, perhaps, but the schools, a 1,100-student vocational school and a 10-room public school still in the planning stage, would look good on anybody's score card. How Dundas PUC scored on its first trip to the plate, and came up with a unique off-peak electric heating system into the bargain, is a story in teamwork and salesmanship.

First students will not file into Highland Secondary School until next September but the utility went to work selling the electric heating concept while the new school was still only a glint in the school board's eye. Even before the decision to build had been made, the PUC was sending technical information and other literature to everyone even remotely concerned with the project.

Still in low gear, the utility shifted its efforts to second as a construction date was set and reached high long before planning was finalized. First came the initial presentation to the school board at which the general advantages of electric heating were outlined. At the utility's request, two years before the first sod was turned this March, a national manufacturer of electric heating equipment made a full-scale presentation on the "unit-ventilator" method of electric heating. Most of the 200 electrica heated schools in Ontario employ this syste

Like the slot man on a daily newspaper, t utility acted as co-ordinator for all interest segments of the electric heating industry. F Jack Wilson, PUC manager, and Bert Boyle, sales, there followed many hours at the c ference table with Ontario Hydro sales p sonnel, school board representatives, archite consulting engineers and suppliers. Beh them all the way were the utility commissi ers and all members of the staff. Dundas r dent D. P. Cliff, 1st vice-chairman of Onta Hydro, was also in there pitching.

All this activity did not go unnoticed by natural gas industry, which made a str pitch for their "total-energy" concept. As p of their presentation, they proposed a gr tour of an all-gas school installation in Albe This was where the groundwork laid so t oughly by the PUC really paid off.

Instead of going west, the school board cials and other project representatives v south — to Steubenville, Pennsylvania, w they visited an all-electric college.

"As far as we're concerned", says Jack son, "that trip was the clincher. School b members and the architect found first-h answers from the college administrators a the efficiency, suitability, and operating of electric heating. They talked to the superintendant about maintenance and o tion and they quizzed students for their tions."

The school board was sold. What rem was for the consulting engineers to work in conjunction with Dundas PUC and On Hydro specialists, the most effective an cient way to heat the school electrically.

Of a striking and original design, the school consists of two separate sections j by a ground level corridor containing t ministration offices. On one side is a two- section with 30 classrooms spaced aro courtyard. On the other is a circular bu with a central gymnasium-auditorium

*Top: this trio of Dundas PUC commissioners is shown examining insulation for underground storage tanks. From left: William Newitt; Ken Hinton, chairman; and Mayor Leslie Couldrey. Dr. J. D. Fleming, a commissioner, and former commissioner Melvin Jaggard also played important roles in winning the school for electric heating.*

*Centre: wedge-shaped shops surround central gymnasium-auditorium in this section.*

*Bottom: PUC sales representative Bert Boyle accompanies school authorities in viewing construction progress. From left: W. E. Bryans, Dundas District High School Board; Robert Begin, principal-designate; Mr. Boyle; and school board members Stuart Philip and Oliver Leslie.*

nded by a corridor. Leading off the corridor wedge-shaped rooms which will be out-ed as shops.

n one sense the heating system developed the school is similar to conventional hot-er systems to be found in many apartment ldings. Water heated in electric boilers is ulated through pipes to baseboard radiators to heaters in the ventilation system ducts. hough electric hot-water heating systems unusual for schools, they have been used other commercial buildings in Ontario, in-ding the new St. Catharines Standard news-er plant.

he outstanding feature of the heating sys-in the Dundas school is the heat storage vision. Much of the required hot water will heated at night when the lowest electrical s can be applied. The hot water will then pumped into three 20,000-gallon storage ks until heat is required during the day. heavily insulated tanks are located under-nd immediately behind the school. A th tank has been buried for future ex-sion.

eat from the high-level lighting system — inimum of 70 footcandles in all classrooms an be recirculated to reduce the demand ne boilers.

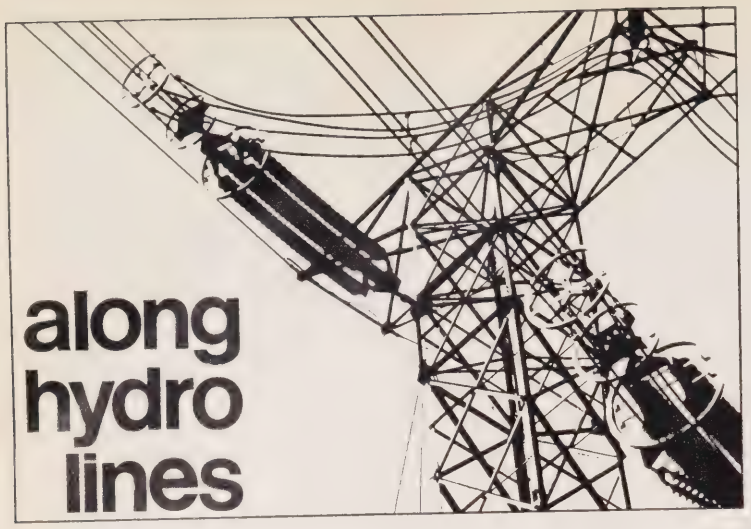
hanks to the carefully engineered off-peak ing system at Highland Secondary School, lt 40 per cent of its electrical requirements be supplied from 11 p.m. to 7 a.m. when rical use by utility customers is at its st. As a result, Dundas PUC expects to ove its load factor by about two per cent. l factor improvements are reflected in rate s to the advantage of all the utility's mers.

ith one school under construction and one ne planning board, Dundas PUC may have t it out on the bench for a few months. when the call comes to play ball, the ces are it will still be batting 1000. Mean-, it's keeping in shape with a wide range ad building exercises. □









# along hydro lines

## Home-town tribute

With the announcement of W. Ross Strike's retirement from the post of Ontario Hydro chairman came a flood of accolades for a job well done. Perhaps one of the most meaningful was paid by his home-town paper, the Bowmanville Canadian. Here are a few excerpts:

"His life has been an interesting and productive one that has seen him advance from a small town lawyer to one of the highest positions in the province. As he climbed each of the steps, his native ability, his winning personality, his thoroughness, his devotion to duty and his integrity played an important part in his successful handling of new tasks that confronted him.

"As Chairman of Ontario Hydro throughout one of its most difficult periods of expansion, one of his greatest assets was his understanding of the problems encountered by municipally-owned utilities commissions. While heading the provincial system, he was accepted by the municipalities as a man with whom they could work in close co-operation.

"The respect and genuine affection he has built up throughout the entire Hydro organization at all levels has not only gained him the title of "Mr. Ontario Hydro", but also has established a measure of goodwill that should live long after his retirement." □

## Long Hydro career ends

Leading Ontario Hydro and municipal utility representatives gathered in Windsor recently to mark the retirement of J. E. Teckoe, manager of the Windsor Utilities Commission for the last 10 years. Mr. Teckoe, who has been associated with Hydro at the municipal level for 43 years, is retiring three years early because of poor health.

In making a presentation on behalf of the AMEU, E. F. Burbank, its president, noted that Mr. Teckoe had been a member of the association since 1923 when he joined as an engineer with Niagara Falls Hydro. He said Mr. Teckoe had been responsible for introducing two-way radios in Hyd vehicles in 1946 and that he headed a committee which modernized Hyc rates in 1952. Mr. Teckoe was president of the AMEU in 1948.

Malcolm Brian, chairman of the Windsor Utilities Commission, is shov second from left, presenting Mr. Teckoe with a model of a television s that was sent to his home. Ontario Hydro Chairman George E. Gatherco second from right, and retired Chairman W. Ross Strike, add their go wishes.



*His contribution to Hydro was substantial.*

## Busy nuclear agenda

A tightly-filled three-day schedule awaits delegates to the 1966 Canad Nuclear Association international conference and exhibition in Winnip May 30-June 1.

The first day runs 13 hours, and delegates will be hustled into a breakf meeting at 7 a.m. the next day before a 30-mile bus trip to more sessi at the Whiteshell Nuclear Research Establishment in Pinawa. Last spe begins around 8 p.m. of the final day.

Delegates from Madrid, Rome, Brussels, Belgrade, Helsinki and dozens American and Canadian centres will see a model of Ontario Hydro's Picker nuclear power plant and hear progress reports on the giant project.

The CNA's choice of presidents indicates the interdependence of nuclear and electrical industries. The first, who served for five years, Ian F. McRae, recently named a commissioner of Ontario Hydro. He will cl the session on heavy water. Mr. McRae was succeeded by J. C. Less president of Hydro-Quebec.

## Labour relations seminars



*Grievance procedures hold their attention.*

A group of utility supervisors is led in a discussion of the "Grievance cedure" by Bob Bean of the Municipal Electrical Utilities Labour Rela Service Department at one of the AMEU Supervisors' Seminars rec held in Toronto.

This year, 385 utility supervisors have attended at 19 of these on labour relations seminars held throughout the province at the request c AMEU Employee Relations Committee.

## Hydro plans east-west link

A major program of transmission line construction in Northern O which eventually will link Northwestern Ontario with the power grid se the rest of the province has been announced by Ontario Hydro Cha George E. Gathercole.

By bridging the gap between Ontario's East and West systems a ph link will be established, on completion in 1968-69, between electric utilities from Saskatchewan to Quebec.

Mr. Gathercole told a Fort William audience that between next fall a 1970s approximately 500 miles of high-voltage transmission line will b in Northern Ontario. Construction of the first phase is scheduled to near Sudbury later this year.

"To help meet growth in power requirements in the Northwest proceeding with the first stage of an interconnection which will eve lead to the physical integration of the province's two major ele systems," he said. "Interconnections introduce economies through

nge of power between regions and strengthen the security of our vital vice to customers."

Mr. Gathercole said the first stage of the project, to be carried out in operation with Great Lakes Power Corporation of Sault Ste. Marie, will t an estimated $20 million. This will involve construction of 100 miles of n-circuit, 230,000-volt transmission line between Michipicoten and Mara- n by 1968. Marathon is at the eastern end of Hydro's northwestern net- k. Initially, electricity delivered to Northwestern Ontario over this circuit Great Lakes Power will be replaced by electricity from Hydro's East tem.

y 1969, a second 230,000-volt line is scheduled for completion between bury and Sault Ste. Marie.

At a later stage, it is planned to construct a 230,000-volt line from the hipicoten area to Ontario Hydro's Rayner Generating Station near Thessa- which will complete the interconnection from the Sudbury area," Mr. ercole said.

At that time, when the East and West systems are fully integrated, it be possible to transfer large amounts of power between Northeastern Northwestern Ontario."

While emphasizing the difficulty of accurately forecasting power demands he Northwest, Mr. Gathercole said Hydro's current estimates predict an ease of about 27 per cent by 1968 and around 46 per cent by 1970. □

## MEA president honored



*Wilson drew a parallel.*

e 50 leading municipal and Ontario Hydro representatives, who journeyed arrie last month to attend the testimonial dinner for Dr. J. E. Wilson, d the new OMEA president deliver a brief but informative review of the lation and relationships governing the "Hydro family" in Ontario.

. Wilson said there was a "remarkable parallel" between the operations ntario Hydro and those of a municipally-owned electric utility under a c utility commission. In each case, he said, the enterprise was self- orting and the capital requirements were liquidated out of operating nues.

ner topics reviewed by Dr. Wilson included the organization of a local nission, limitations on the utilization of funds, advantages of the com- on system and the representative nature of the OMEA.

tario Hydro Chairman George E. Gathercole presented the new associa- president with a gavel.

honoring me as president of the OMEA", Dr. Wilson replied, "I feel re doing honor to those far-sighted gentlemen who on February 14th, met in the City of Toronto and brought into being the Ontario Municipal ic Association. They and the succeeding officers have built up a proud d of achievement on behalf of the member municipalities."

Wilson is shown in the photograph, second from left, receiving the from Mr. Gathercole. They are flanked by J. C. Ferguson, manager, ian Bay Region, left, and Mayor L. E. Cooke of Barrie. □

## rty years a commissioner

ting a scroll commemorating his 30 years continuous service as a York Hydro commissioner, Dr. Ralph Johns, centre, also received con- ations from Ontario Hydro Chairman George E. Gathercole, who com-



*Dr. Johns was the guest of honor.*

mented on the tremendous growth North York has experienced during Dr. Johns' association with the utility. Pictured with Dr. Johns are Reeve James Service, left, and Arthur Meen, Q.C., chairman of North York Hydro. The presentation was held at the Inn on the Park. □

## Heavy water production

Atomic Energy of Canada Limited has received government authorization to enter into a contract with Canadian General Electric Company Limited for the supply of heavy water from a new plant to be built in Canada by mid 1969.

CGE's proposal for a plant with a capacity of up to 500 tons per year and a guaranteed sale of 5000 tons within a maximum delivery period of twelve and one-half years was accepted. The company will be responsible for financing, designing, building and operating the plant. It will select a site before mid-June.

The price for the initial production will be $20.50 per pound, and this will decrease over the contract period to $16.00 per pound.

AECL is also authorized to negotiate with Deuterium of Canada Limited should the Deuterium Company desire to expand production at its Glace Bay plant in Nova Scotia. □

## Jumping to first place

Ontario Hydro photographers reaped some of the top awards in the Professional Photographers of Canada's 19th annual print show. Competing with 845 entries from across Canada, Hydro's photographers gained two first prizes and had two other prints accepted for showing in the Print Show's national display which will tour Canada for the next 18 months.

A sky diving photo story featuring the high-flying exploits of Hydro employee Barry Cruickshanks won first prize in the press section for Ted



*The photographer stayed on board.*

Johnston. A color view of Lakeview generating station, by Gary Smith, won first prize in the industrial classification.

Accepted for showing in the national display were Harry Wilson's unusual perspective of the Lambton generating station site and Ted Johnston's study of Hydro pensioner and nonagenarian, Harry Strickland. □

## Looking at lights



*They learned about lamps and standards.*

Toronto Hydro officials recently conducted members of city council and local business association representatives on a unique tour at which street lights were the star attractions. And the lamps radiated light ranging from white to pink and yellow.

It was all part of a trial installation along a Bloor Street block to decide how this main uptown thoroughfare should be lighted as part of a $5 million face-lifting soon to commence. Street car tracks will be removed along the 10-mile section under which the subway extension now runs.

The special display included color-corrected mercury and white mercury lights along with metal-arc mercury with added iodide, and sodium vapor lamps. Seven different lamp standards were displayed including three steel configurations, spun aluminum, painted steel and round-spun concrete.

Mayor Philip Givens is shown prior to the tour enjoying a close-up of one of the lamps with, left to right: Harry Hyde, Toronto Hydro general manager; Alderman Alice Summerville; Wilf Warner, president of the Danforth District Business Men's Association; and J. L. Adam, president of the Yonge-Bloor-Bay businessmen's group.

Toronto Hydro will make recommendations on the lighting to city council after a careful study. □

## municipal briefs

**Plans for a 550-acre housing development** to cost $50,000,000, in Thorold Township, were announced recently. Situated on property adjacent to Brock University's Decew campus, it will accommodate 10,000 persons. To be built in stages over the next eight years, the project will include 1,600 single family units, 470 multiple housing units and high-rise apartments.

**George Boucher**, manager of Paris PUC, retired April 30, after more than 30 years service.

**Operation** of Port Arthur PUC was the topic of the final meeting for the season of the Junior Chamber of Commerce "hot seat." On hand to field questions were E. A. Vigars, PUC general manager, and the commissioners. The public was invited to attend.

**A. D. MacLeod**, an engineer with Ottawa Hydro, was elected president of the Eastern Ontario Association of Municipal Electrical Utilities at the recent annual meeting, in Cornwall. Neil Briton, Belleville PUC, was named vice-president.

**Sandwich South Township** council is considering the establishment of a township PUC. The Windsor area township is presently served by Ontario Hydro's Essex area.

**In a letter** to Ontario Hydro's Public Relations Division, C. V. MacLachlan, manager of Ingersoll PUC, suggests that the dangers of playing arou excavations and pipe or pole piles might be pointed out in future safe posters. He notes that his utility makes a practice of securing such pil with guy wire to prevent them rolling on children.

**Halifax transit system** recently celebrated the 70th anniversary of t inauguration of electric trolley cars in the Nova Scotia capital. Elect heaters were a feature of the earliest street cars introduced in 1896. Toc the system operates 81 electric and 12 diesel buses.

**Newly formed** Huron Electric League is off to a good start with up to 85 cent attendance at two recent meetings. Purpose of the Western Onta group is to provide an educational forum for people in the various facets electric service, as well as improve public understanding of the industry

**Goderich PUC** has enlisted the aid of the community in a hunt for old tures and documents which will add authenticity to the utility's hist being compiled for the Hydro Hall of Memory. George Filsinger, comm sioner, guaranteed that anything loaned would be returned in good shape

**Village of Highgate,** in Western Ontario, has honored J. R. Attridge, chairr of the Hydro commission, for 46 years service with the local utility. He village postmaster from 1913 to 1959 and village clerk-treasurer from 1 to 1965. Mr. Attridge was guest of honor at a dinner where a letter of gratulation was read from G. E. Gathercole, Ontario Hydro chairman.

**Mel Downs** has been appointed manager of the Streetsville PUC after years with Meaford PUC. A member of the Meaford General Hospital bo of trustees and a past president of the local Chamber of Commerce, Downs started with the utility as line foreman and spent the last 19 y as manager.

**The Electrical Contractors Association** of Ontario had an electric hea consultant's booth set up at the recent National Home Show in Toro Many interested queries are reported and over 5,000 brochures on ele heating were distributed during the 10-day show.

**George Claridge,** 51, supervisor of personnel for Toronto Township collapsed and died at a hockey game last month as the boy's team he aged won a championship for the first time in 10 years.

**Waterloo's application** to annex 92 acres of Waterloo Township has approved.

**Miss Vera Hoffman,** 76, Stratford PUC's office manager for 44 years unti retirement in 1955, died at Stratford General Hospital after a brief illnes

## New Hydro exhibit for CNE

An entirely new Hydro exhibit will be featured at the Better Living Cent this year's Canadian National Exhibition. Employing an integrated s institutional approach, the theme will stress how electricity helps man's needs, and show that Hydro, a modern and progressive utility, sup power at low cost.

Feature displays in the exhibit area will deal with food production, munications and transportation, city life, industry, health and home en ment of today and tomorrow.

Three dimensional effects will be achieved by the use of color, anim motion pictures, sound and lighting. A 10-minute puppet show will b crowd collector in the theatre area.

## March energy production

Primary energy provided by Ontario Hydro in March totalled 4. billion kilowatt-hours, an increase of 9.9 per cent over the sar month a year ago.

For the first three months of 1966, the total is 12.37 billi kilowatt-hours, up 9.9 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand March was 3.91 billion kilowatt-hours, .6 per cent more than t previous month.

The seasonally adjusted total for March represents 46.88 bill kilowatt-hours at annual rates. This is 337.0 per cent of the ene demand in 1949.

# off the wires

Having disposed of education, population control d hygiene in recent columns, we will devote this nth's observations to the fields of geography, ciology, art, war, entomology, love, music and ience. It should be understood at the outset, wever, that the writer is not attempting to say that might be said on these topics. Rather, it is hope that by allowing small but penetrating s of light to fall on a variety of subjects, the ader may be inspired to examine a particular ld in greater depth.

Being a nasty business all around, war should rhaps be got rid of first. Tolstoy, you will recall, ld forth for hundreds of pages on War and ace but we, having nothing to say on peace, will more concise. And it isn't really war that draws attention this month, but a single duel — a nt, if you like, between front-end loaders.

This singular event apparently took place re-ntly near Arnprior in the historic Ottawa valley ere two men, under the light of a new moon d mounted on the huge excavating machines, d at each other. Why is the match deserving of niche in man's long history of combat? During course of their elephantine manoeuvring, one vered a hydro pole, plunging the area into dark-ss. We feel safe in assuming this was the first ckout ever caused anywhere by a front-end der fight.

On art there is not too much that can be said er than to point out how it continues to reflect n's descent from the trees, his gradual evolution o a rational being capable of appreciating beauty, d his final retreat back to the leafy bowers from ich he descended. Our clue to the completion of cycle came in an Associated Press dispatch m Albuquerque, New Mexico.

Here, we are told, the Public Service Company New Mexico, an electrical utility, bought one of en pictures painted by two gorillas in the Albu-rque zoo. An earlier painting by the same artist, ated, we suspect, during his development stage, d for a thousand dollars.

Our next item might be considered under the dings of science, love, or sociology depending n the individual's turn of mind. It has to do n a segregation problem being faced by the Uni-sity of Toronto's Shade Tree Research group. cifically, if they could find out what attracts e elm bark beetles (other than female elm beetles), they might be well on the way to ting Dutch elm disease.

's complicated but not beyond comprehension. oes something like this. A way has been found sterilize male beetles with chemicals but the ess does not affect females. If sterilized males released and mate with natural females, the do not hatch. But if females are released and natural males — wow! In other words, hang on to the females and release only the sterilized males.

Easy enough, except that an effective control program would involve the breeding of about 100 million beetles and, so far, the only way to segregate the sexes is by hand. Considering that the insects are only about one-eighth of an inch long, it would take a bit of doing, even if we all pitched in. Some of us, of course, wouldn't know a boy Dutch elm beetle from a girl.

• There was a time, when it was pretty safe to tell your piano or organ-playing guests "We'd love to hear you play." Not any more. Instead of a contribution to the wassail bowl, the package that last guest put down could be an electronic organ. A Scarborough firm recently sold half a plane load of the portable "a-go-go" organs in a few days. Imported from Italy, they sold for about $900. The entire organ folds into a carrying case and weighs about 70 pounds.

One feature of the pint-sized "Combo-Compact" has us puzzled. It has a "multi-tone booster" delivering what they call "a tremendous attack effect and high-frequency WOW". Is this an organ they're talking about or a platoon of marines?

And that's all we have to say about music.

• Back in the wonderful world of science, we feel obliged to mention some important research being conducted by a Stanford Institute group. In a paper entitled "Atmospheric Electricity in a Typical American Bathroom," they report "strong but harmless" electric fields generated by running water. The phenomenon occurs when water runs into a wash basin or bathtub from either a shower nozzle or tap. Still more significant, we don't doubt, the group has established with some certainty that the electric fields can be strengthened by keeping the stopper out of the drain and letting the water splash on the hard surface of basin or tub.

And that's not all. The negatively charged components of the electricity remain largely in the bathroom atmosphere while the positive stuff goes down the drain. "There is much evidence", the group significantly deduces, "that a negative space-charge in the atmosphere promotes a feeling of well-being."

Aha! In addition to the glue-sniffers and goof ball addicts, we may have people getting their kicks from negatively-charged bathrooms — a hard vice to stamp out and one with dangerous political implications. Imagine what a cabinet minister could do with a secret document establishing that an opponent had spent over half an hour at his toilet with the water running. A tapped drain could quickly establish a preponderance of positive charges.

• All of which brings us around to geography with overtones of sex and sociology. For this item we are indebted to David McClymont, editor of the Georgian Bayer, who, for reasons apparent only to other editors, found the foresight of the Chukchi women of Siberia a good point to bring out in a Hydro publication. These ladies, Mr. McClymont was right to point out, have a system that assures them a strong and virile husband in later life. Upon reaching maturity, a girl not only marries a man about her own age, but also adopts and marries a male infant who, some twenty years later (more or less, we presume), takes his place as her husband.

Well, well, well — and did you know that a pound of electricity from the Pacific Gas and Electric Company of San Francisco would cost you $42,000? Their engineers worked it out on the basis of a pound of 100-volt electrons in one hour at sea level. What the sea had to do with it we can't honestly say but, according to their slide rules, it came to 500,000,000,000,000,000,000,-000,000,000 electrons. What could you do with all these electrons? Back to the slide rules went the engineers. A pound of electricity will hoist 2,875,-000,000,000 pounds of suitcases into the trunk of your car or it will lift you a hundred miles into the air 280,000 times — at a cost of 15 cents a trip.

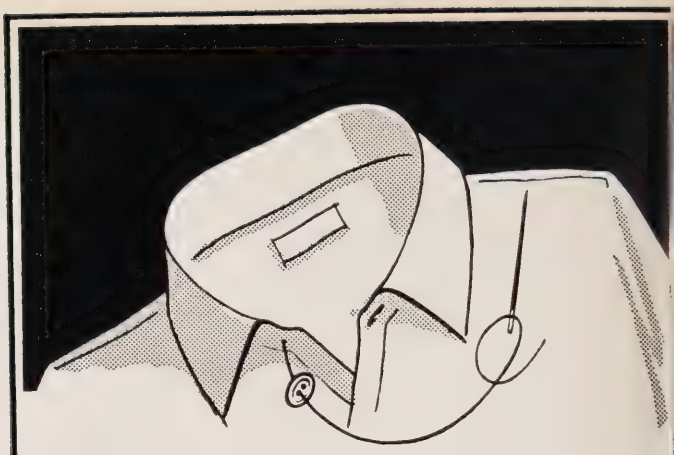
What set the PG&E slide rules working like the trombones in a philharmonic orchestra? Just a simple request from a customer who wanted to know how much the company charged for a pound of electricity. Given the answer, the customer wrote back and wanted the figures for 200-volt electrons. The engineers just laughed and the last time we heard they were still laughing — somewhat hysterically.

• Still in the realm of geography, insofar as Australia is a geographical location, this time with some sidelights on abnormal behaviour, we pass on a warning all the way from Sydney, N.S.W. It applies to anyone who might have been thinking of ironing his hair. Yes, as far as we can make out, some Australian girls have been using electric irons to smooth out the kinks in their hair. Presumably the practice is confined to the aborigines but in any event, hairdressers down under are discouraging the custom. Instead, they recommend that people get their hair straightened with electrically heated combs, used in conjunction with oil in the hands of an expert.

But fancy ironing one's hair — how would they get around the ears? What about bald spots? No wonder some of those Aussies are hot-headed. No telling what they'll pull out of their tucker bags next.

And so we come full circle, from geography to sociology and back again. If we have left any gaps we can only refer you to a good set of encyclopedias. □

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10



**one ordinary penny**

wouldn't pay for having a button replaced on your husband's shirt.

**but...**
**one hydro penny**

will wash over thirty white shirts in an automatic washer!

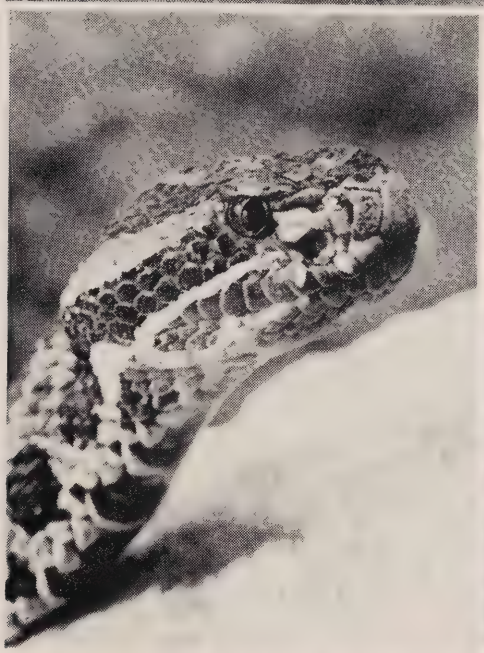
YOUR HYDRO PENNY IS THE BIGGEST PENNY'S WORTH IN ONTARIO TODAY

***your hydro***

Electricity is a bargain in any man's language as t
advertisement points out. It is one of several p
pared for the municipal electrical utilities to as
in their local advertising programs. Others equat
penny's worth of electrical energy with the ope
tion of a washer, sewing machine, electric drill
a record player. Their uniform layout helps estab
continuity and a "family" resemblance. Mat
stereos of these and other advertisements are av
able without charge from the Advertising and M
keting Services Department of Ontario Hydro.

**1906/1966 sixty years of hydro progres**







# ontario hydro news

june / 1966

- instant lawns are big business
- dimples is a massasauga
- hydro is digging up the past

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ontario hydro news
june/1966

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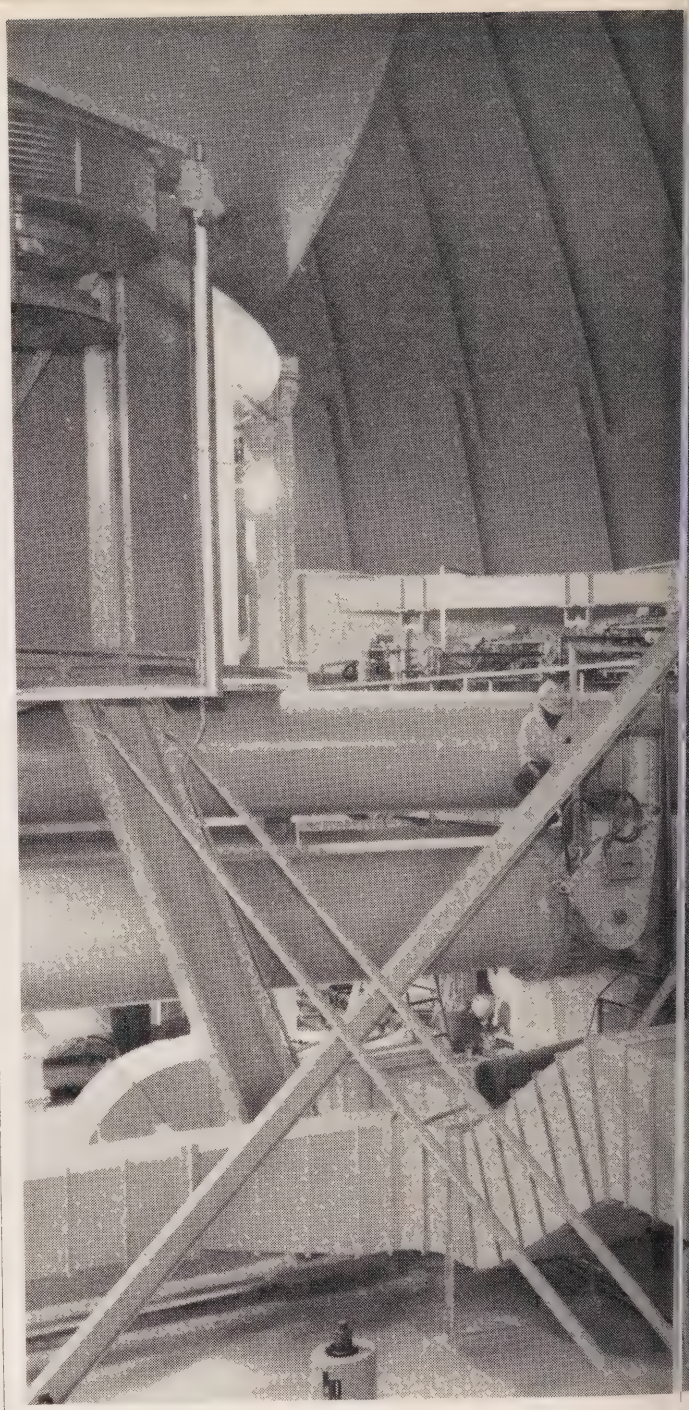
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**A prominent nuclear role.** Canada's prominence in the science devo the productive uses of atomic energy was suggested by the numbe calibre of delegates attending the recent convention of the Canadian N Association, in Winnipeg. The event attracted more than 300 delegate about 15 countries, including at least one from behind the Iron Curtai

Several of the countries represented could be regarded as prospecti chasers of the Canadian reactor system which is gaining increased att in world markets. Among its appealing features is the use of natural riched) uranium fuel and the ability to re-fuel without shut-down.

India is building a second Canadian-style nuclear-electric plant and Pa has begun its first. Both countries have personnel in training in Ontari

Each of these plants is closely patterned after the Douglas Point n electric station — a 200,000 kilowatt development nearing complet Lake Huron.

This photograph suggests the geometry of the 400,000-gallon dousi and the dome of the reactor building at Douglas Point. The tank holds water for emergency purposes.

# in for a refit




**five weeks in drydock and hydro's flagship of the demonstration fleet is ready to sail under new colors.**

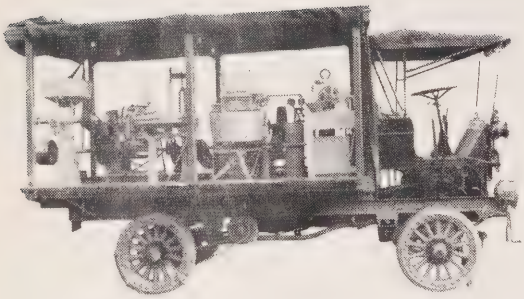
After logging the equivalent of two trips around the world, the flagship of Hydro's mobile demonstration fleet recently pulled into drydock for a major refit.

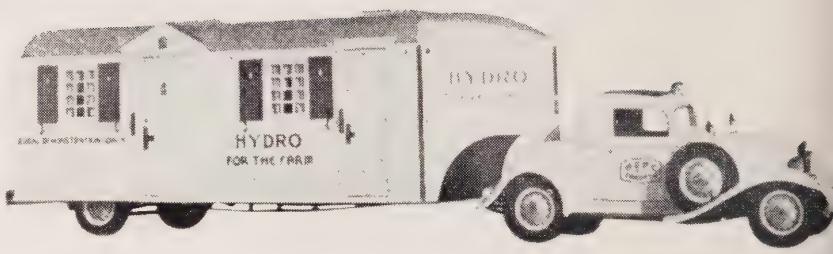
Scarcely was she secured when the carpenters, painters and electricians, swarmed over her 54-foot superstructure. Pronounced ship-shape after five weeks of feverish activity, and sporting the new Hydro symbol and colors, she has since resumed her voyages along the highways and byways of the province.

Aside from acquiring the "new look" externally, Hydro's mobile electric heating centre underwent structural changes, was fitted out with new displays and had the original tractor replaced with a 1966 model.

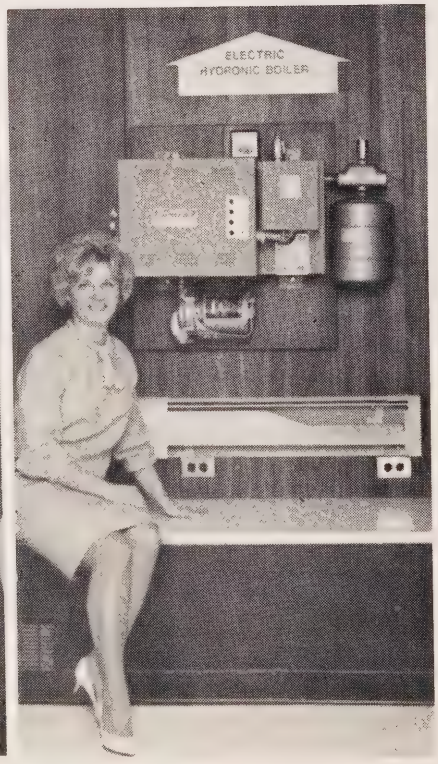
Not that the present giant land cruiser set a Hydro precedent when it was launched in 1959 as a general exhibition van. Hydro's faith in the power of demonstration goes all the way back to the days of Sir Adam Beck. Not content just to reach urban folk at fairs and exhibitions, he sent out his first travelling "circus" in 1912 to show farmers how electricity could help them do the chores.

Laden with various types of household appliances and other electrical apparatus, the caravan travelled from farm to farm on a tight, pre-








*The new look in Hydro demonstration coaches is a far cry from Sir Adam Beck's "circus" (circa -1912), the jaunty 1937 model, and even the present van, right, seen before the overhaul. Today's model draws crowds at every stop as Ernie Trafford, shown talking to an interested visitor, testifies. The young ladies are demonstrating some of the new interior features.*

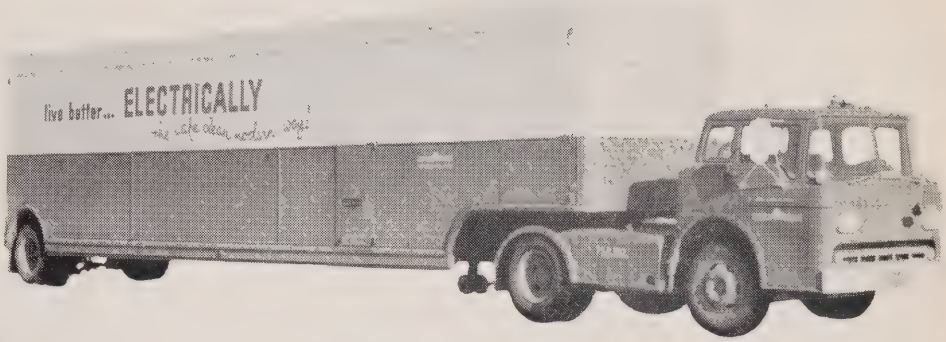
arranged schedule. Locomotion was pro by relays of horses or by an auxilia horsepower truck. Operating on the theo seeing is believing, a cow would be milke an electric milker and the cream dis with coffee brewed on an electric stove f tribution during the demonstration.

Today's 15-ton tractor-trailer unit is distant relative of Sir Adam's creaky ol van and it has included urban areas lar small across the province in chalking first 50,000 miles. It has since been joi bringing the gospel of electricity to the by three smaller vans featuring general p exhibits and operating out of the Georgi Eastern and Western Regions. A fourt order for the Niagara Region and all flying the new Hydro colors as maint schedules dictate overhauls.

Created at the outset of Hydro's co marketing program in 1959 as a gene monstration van, the travelling infor centre was used to promote the Me Home concept before being converted to the electric heating theme.

Among the structural changes incor during the overhaul was the fitting of glass doors which, with interior electr ing, makes the coach an inviting haven weather events such as winter carniva




new tractor provides improved manoeuvrability and increased power to reduce both travelling and set-up time.

Inside, a hydronic boiler, the electrical version of a hot water heating system, replaces the heating computer previously displayed, while a manually controlled electric heating panel has also been added. This selector enables visitors to quickly determine the kind of electric heating best suited to their particular homes.

Another innovation is an arresting illustration of a forced-air electric furnace. "The actual unit was too large to install," explains Harold Hillier, Ontario Hydro's sales services officer. "But you will notice how the heating system, with ducts and electronic air cleaners, is all clearly outlined in the diagram."

The new displays also feature a good cross-section of electric heating equipment, including various room temperature selectors, drop-in floor heaters, compact cabinet convectors, moveable baseboard units and fan-forced heaters.

"Electric heating is still very new," Mr. Hillier points out, "and I think a visit to our mobile display will surprise a lot of people with the range of equipment which is now available."

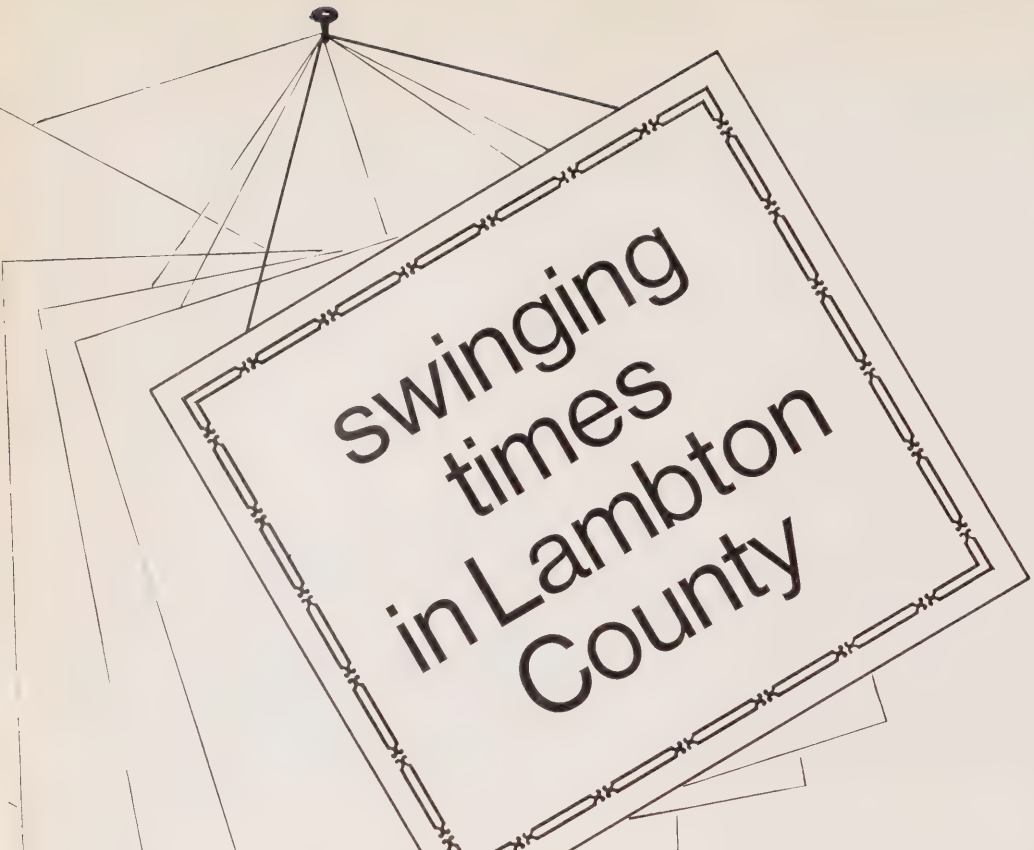
Behind the wheel of Hydro's sales behemoth is stocky Ernie Trafford, who also does the demonstrating, and the time he spends on the road would make most travelling salesmen look like stay-at-homes. "Last year we made 46 stopovers and they really ran the gamut of social gatherings," Ernie recalls. "They ranged from the Charcoal Festival at South River and the Dairy Princess Contest at Waterloo to the Lakehead Exhibition at Port Arthur - Fort William." More than 10,000 people viewed the Hydro trailer during the Lakehead event.

Ernie chalked up his longest haul last summer when he drove the Hydro "rig" to Red Lake — which is about as far north as you can get by road in Ontario. Fifteen scheduled stopovers were carried out on this Northwestern safari.

"People are funny," he muses. "Sometimes you'd swear they never see a thing. Yet these are the ones who ask the questions and are surprised to find out how many ways there are to live better electrically."

And he's glad the drydock session is over for he has a heavy schedule coming up. Bookings have already been accepted for the London-St. Thomas area and the Northeastern Region is on the summer itinerary.

"She really looks sharp in white," Ernie says, "with the orange and vermillion symbols. As well as promoting electric heating we'll be selling Hydro's new look." □




## in the good old days, they threw out gasoline.

by LES DOBSON

Time has knocked the rough edges off the rival communities of Oil Springs and Petrolia since their oil boom heyday of a century ago. But the pioneering spirit of the townsfolk has mellowed little.

They call 'em "Hard Oils" — the ones who've been around too long to be Johnnies-Come-Lately. And a black, glutinous liquid pulses through their veins.

Past and present are curiously intermingled in this area which boomed, bust and refused to die. Oil still oozes tantalizingly to the surface in marketable but unexciting quantities. Oil still seeps into every street-corner conversation.

Separated by nine miles of Lambton County's low-lying and fertile farmland, Oil Springs and Petrolia have a fascinating story to tell of dramatic events and colorful personalities. It is also a chaotic and often inaccurate story of people who had no time for historic records in their frantic quest for riches.

Oil is known to have been there for as long as anyone cares to remember. There's a report of British soldiers using it to lubricate their rifles way back in 1802; United Empire Loyalists cursed the "gum oil" they found near Enniskillen, now Petrolia, because it withered the vegetation and lowered land values.

Little did these early settlers dream tha bothersome black treacle in the surroun swamps would one day spread its rich ri around the world.

James Miller Williams, a Hamilton busi man, set the ripples in motion. He is gene accredited with drilling the first comme oil well, some say in Canada, others n tain in all of North America.

Men had tapped surface oil before him Williams' shallow well, punched down in at Black Creek, now Oil Springs, was the lude to an oily Klondike which revolutio domestic lighting until the advent of el power a few decades later.

It seems almost as though fate had de that the advent of electric power shoul incide with the petering out of Ontario fields towards the turn of the century. The ince, poorly endowed with fossil fuels, then able to tap the vast energy resources tumbling rivers and streams.

Williams distilled his crude oil into a colored burning oil for lamps, selling for $1 a gallon. A dangerously volatile by-pr know as gasoline was thrown away as u for many years to come.

But the real boom literally shook Oil S in 1862 when 50-year-old Hugh Nixon up to his ears in debt and with only a 20 hole to show for six months' back-bre toil, struck a gusher.

The cannon-crack that thundered fro bottom of his well was heard over the field and moments later a great fountain spouted above the treetops, splintering th ing rig like so much matchwood. Com out of control, the well roared on for da splattered 2,000 barrels of precious oil over the surrounding countryside. The two or three feet deep in places, eve draining into Lake St. Clair where it scum which stayed on the lake all sum

Seized by oil fever, prospectors, bu men, diviners and sharpsters surged i Springs to line their pockets and help b a flickering, lamp-and-candle world.

Hotels and saloons sprang up overnig at one time, the population topped 7,5( now just over 500. Oil Springs was trans from a mere hamlet into a swinging com

*attered among the houses, the spidery sentinels of e oil industry competed with the church eeples in the Petrolia of 100 years ago. Backyard l rigs are still to be found in the area.*





*Doing it the hard way, early drillers used a pointed weight at the end of a tree trunk to pound a hole through earth and rock. The weight was made to spring up and down by men walking across a platform.*



*Colorful relics of the oil boom days are displayed in $100,000 Oil Museum of Canada, opened at Oil Springs in 1960.*

with kerosene street lights — among the first in Canada — and a frequent stage coach service.

Almost as suddenly, Shaw's well dried up, leaving him virtually penniless. He'd been offered $25,000 in gold for his property, and he'd turned it down.

Production elsewhere began to fall and drillers turned their attention to Petrolia, by now another rip-roaring, razamataz conglomeration of hotels, saloons and muddy, oil-streaked roads. It had a permanent population of 5,000, compared with the present 3,800, and hundreds of transients living in shacks and tents.

One of the most lucrative wells was struck by a Captain King, of St. Catharines, and yielded the extremely large flow for Petrolia of 265 barrels a day. Price fluctuated wildly in this speculative era, ranging from 75c to $10 a barrel. Land prices were fantastic for the time, and one individual was reported to have refused $400,000 for 200 acres.

Small refineries mushroomed, although the bulk of the oil was hauled to Sarnia over a plank road by teams of horses and oxen pulling wheelless flat-boats. Toll gates were set up along the route and tired teamsters were able to quench their thirst at several taverns.

It was the sight of hundreds of these teams, passing night and day, which inspired Louisa Walker, daughter of an Anglican clergyman in Oil Springs, to write the hymn:

Work for the night is coming,
Work through the morning hours . . .

Locomotives and rail links later replaced beasts of burden and plank roads.

These were action-packed days and drama-filled nights. One warm summer evening in particular, fire broke out among wooden storage tanks at Petrolia. Burning oil flowed across the field, spreading the blaze from tank to tank. Flames leaped 100 feet in the air, lighting up the countryside for miles.

The fire burned for two weeks and the intense heat charred the ground several feet deep. The loss was incalculable and led to a new development in the oil industry, underground storage tanks.

Only one lynching marked these days of rough and ready justice, and it didn't quite come off. The miserable victim was freed after considerable neck-stretching from an oak tree persuaded him to reveal the hiding place of six hundred missing dollars.

But of all the exploits, those of Harry Prince were perhaps the most notorious.

Prince, a one-time railroad conductor, who by various means had accumulated $30,000 in a few years, launched an oil prospecting company on land of dubious value. Shares of the company were sold to English investors, whose representatives were entertained lavishly and shown wells apparently bubbling with potential profits. They had been surreptitiously coupled for the occasion to genuine producers.

Prince eventually beat a hasty retreat to Chicago with a reported $200,000, only to speculate his sizeable fortune and die a poor man.

Today, although the flow of oil has dwindled to a relative trickle, the contribution of these towns to the world's oil industry has been re
nized.

Here it was that the unexplored techni
of refining were laboriously worked out.
prospectors taught themselves drilling k
how, invented the tools for the job and
left Ontario, taking their skills to the rem
corners of the world.

It was J. H. Fairbank, whose grandson
operates oil wells in the area, who devel
the jerker-rod system which enables a si
low-powered motor to pump more than
wells simultaneously.

Oilmen who acquired their art in Pe
and Oil Springs later pioneered oil fiel
such countries as Persia, Burma, the Arge
and Romania. A $100,000 museum open
Oil Springs in 1960 bears witness to the ti
of local drillers . . . snake skins from Trin
war drums from British Guiana, wo
figures from Egypt, shells from the South
Only recently, church missionaries con
Petrolia experts to arrange a drilling pro
which has resulted in a new watersupp
a drought-stricken town in India.

Some men came back from those ear
fields and some of them now lie in the
quility of Petrolia's Hillsdale Cemetery. (
never returned.

Charles Whipp, editor of Petrolia's v
newspaper (like most Johnnies-Come-
he couldn't be prouder of the place)
"You could manage, I suppose, without
to and Montreal, but the world would
been much the worse off without Petroli

Between editions, Mr. Whipp is busy
a history for the town's one-hundredth
day.

And the Petrolia of 1966? It's a th
agricultural and industrial centre in the
of a three million dollar development pr
Its schools rank among the most progre
Ontario — oral French is taught in
school and the high school is intro
classes in computer operation.

"The town can't stand any more b
says Mr. Whipp, "from now it it has to
solid foundation."

But they still dream of gushers in th
of Ontario. So perhaps it's symptomati
area, and the people, that an oil rig sti
ates within a few feet of Petrolia's bu
street.

*ashbacks to a booming Petrolia show a busy oil refinery*
*d a packed hotel before the turn of the*
*ntury. Kerosene was the all-important product as*
*re was no use for gasoline. Oil rigs like*
*one, lower right, can still be found virtually down town.*







PHOTOS COURTESY IMPERIAL OIL LTD.

# the inspector looks back

Harry Strickland was in the electrical business long before the hydro concept was even considered.

by LOIS LANE

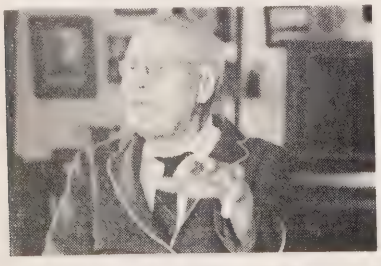
It was one of those grey days when a salt and pepper sky seemed to hang right down into Sturgeon Lake whose silver water quietly lapped the cottage-dotted shore line. But inside Harry Strickland's birch-encircled home at Kenstone Beach, south of Bobcaygeon, a warmth radiated from the alert 96-year-old Ontario Hydro pensioner which dispelled the gloom of a leaden April day.

Even at this great age, Mr. Strickland, who maintains he keeps in top physical and mental shape by associating with young people, had no difficulty in recalling his early days in the electrical field — days long before 1913 when he began what is now Ontario Hydro's Electrical Inspection Department. We asked him to put on his thinking cap to help us recapture the flavor of the "good old days" on the occasion of Hydro's 60th anniversary, being celebrated this year.

"Electrical inspection in Ontario dates back to the year 1892 as near as I can recollect," says Mr. Strickland, "a year or two after the Toronto Incandescent Electric Light Company was established. At that time I was connected with the company and had much to do with obtaining contracts for the installation of wiring and motors in Toronto and the estimating of these jobs.

"In the 1890s, wiring was installed in a variety of ways which, to say the least, were startling to behold," he says with a twinkle.

"I remember distinctly a wiring job in a Toronto building in which a rubber-covered wire was threaded through the joist with gimlet holes. It was tacked on the brick walls between the strapping with pieces of tape and nails, much as you would train a Virginia creeper up the side of the house. After these 'electric creepers' were carefully tacked on the walls, they were covered with fresh wet plaster.



"The circuits were ostensibly protected by wooden 'cutouts' — blocks dipped in parafin, with open fuse wire which melted and broke the circuit under too heavy a load. These were mounted in wooden pockets in the walls — strictly without asbestos.

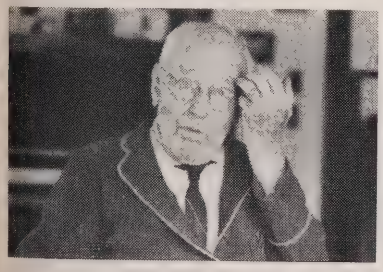
"The chief form of protection and general



sh in most wiring jobs," he goes on, "was a od daubing with P and B Compound, comnly known as 'stink'. So long as a wiren could daub a lot of P and B on the service nnections and generally cover everything up t did not look right electrically, it was conered to be a good job," he recalls.

Service entrance equipment at that time coned of a piece of board nailed up some place ndy, in a clothes closet, basement or attic, told us. The wires came in from outside ough a couple of holes in the panel board d after being wrapped with tape, they passed ough an Edison meter and ran directly to branch cutouts.

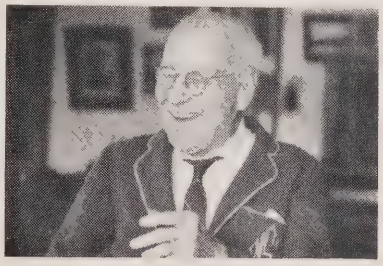
This situation seemed to prevail until about 08, when conduit services were introduced, ich brought the meters and panel boards vn from the bedrooms, bathrooms, and at- to basements where they could be more veniently reached by the meter reader. edless to say, the change saved the meter ler from walking into some embarrassing ations.



fter his job with the Toronto electric com- Mr. Strickland worked at the John Inglis t in Toronto. "I worked in the machine for 40 cents a day," he recalls with a t. "And I also put in a short stint with ern Electric in Chicago, putting telephones her, before I joined the Canadian Fire rwriters Association in 1906.

he Fire Underwriters, who inspired the lectrical code, did so to protect themselves was their chief electrical inspector from to 1911," Mr. Strickland mused.

can remember the early days of Toronto o and competition is nothing new to them. re 1911 the Toronto system was operated branch of the City Engineers' Depart-) When rows of houses were being built often a race between Toronto Hydro and oronto Electric Light Company, which abd Incandescent Light in 1896, to install rvice. I have seen one or the other of suppliers install services in a whole row ses before they were lathed and plastered. ey'd even put in meters and turn on the current. I remember one case where a couple of laborers were digging in a cellar of a house when one of them happened to touch the main switch. He must have thought he was bitten by this new electrical bug because he took his spade and flattened the meter and everything else around it."



So keen was the competition that Hydro and the power company occasionally lost track of their meters. Mr. Strickland recalls at least one case where Hydro was collecting from a meter in a house connected to the Light Company's service.

Harking back to his Fire Underwriter's days, Mr. Strickland attests that the electrical inspector's lot was not always a happy one. He was often regarded as an interloper by the industrialist and one inclined to butt in on the firm's engineer, who was regarded by his employers as the epitome of knowledge.

"On one occasion management very condescendingly allowed me to accompany the firm's electrician through the premises. Venturing to suggest that some of the wiring was not up to standard, I was ushered into the general manager's office where the electrician implied that my suggestions were bunk.

"The manager told me he would give my recommendations due consideration, even though he considered them trifling. Among them was the matter of 500 volt D.C. power lines lying hard on some gas pipes, which hung loosely under a wooden ceiling. There was not a properly fused circuit in the building and branch circuits were overloaded from one hundred to one thousand per cent.

Knowing the owner would ignore the situation, I had the firm's fire insurance rate increased very considerably and sat back for the reaction. The place was soon rewired.

"On re-inspection," Mr. Strickland continues, "I found the system in first class shape until I dropped in on the general manager and spotted the only remaining defect. The light cord hanging over his desk had four or five coils of slack between the ceiling and the socket, and the whole thing was badly worn. Too, there was no protection whatever between the socket and the 50 ampere main fuse.

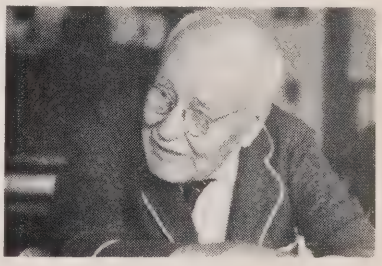
"He couldn't see any harm in a cord that had already lasted for five years, and anyway, his engineer had made the installation.

"During our conversation, the manager kept running his fingers over the cord and twisting it around his hand.

"All of a sudden there was a flash, a puff of smoke and something like a miniature skyrocket shot up from the manager's hand to a point on the ceiling, leaving a big black smudge where the last vestiges of the cord had burned. The last I saw of the general manager he was in serious consultation with his engineer."

Estimating the value of electrical equipment owned by private companies about to be taken over by the municipalities was another of the jobs Mr. Strickland had at the Underwriters. In these cases, the owners engaged him to submit estimates, while the municipalities also appointed their own evaluators. Some of the communities concerned included Guelph, Woodstock, Midland, and Mount Forest. Mr. Strickland joined Ontario Hydro as its first chief electrical inspector, in 1913.

But the commission didn't assume responsibility for the inspection on a provincial scale until 1915 when the Power Commission Act was amended. "By 1918," he recalls, not a square inch of territory was left uncovered. And every man holding the position of electrical inspector on the Ontario Hydro staff was a well trained journeyman wireman".



Harry Strickland has been retired some 32 years now, living in his home which he built himself in 1926. He prides himself on his good health and still takes a daily swim when the weather is warm. But he recalls his days as an enthusiastic member of the Toronto Polar Bear's Club with a shudder.

And while he can still coax a lively tune from his violin, he doesn't have the same ear he enjoyed as an early member of the Toronto Symphony Orchestra. On the other hand, the years have left him his rich sense of humor and he certainly doesn't look like a man who was born when Canada was still very much in rompers. □

# anyone for tea?

in the U.S., the chances are they haven't seen an electric kettle.

Co-pioneers in space exploration and acknowledged leaders in such fields as electronic technology and automation, Americans still have much to learn about the age-old art of boiling water.

Only the enlightened few use the electric kettle — a standard household appliance in most Canadian and British homes, but a "specialty" import south of the border. As in grandma's day, the common U.S. practice is to place a saucepan of water on the stove . . . and wait . . . and wait.

Appliance manufacturers in Canada have been happy to make the most of this rather curious situation. Because few, if any, U.S. manufacturers are in the kettle business, the market is largely supplied from Canada.

Although small, the electric kettle market in the U.S. is ever-increasing, according to Ken M. Dodds, products planning manager,



nadian General Electric. Kettles from CGE's rie plant are marketed and distributed in U.S. by the parent company.

Boston's famed social event of 1773 notwithstanding, most Americans are dubious at t sight of an electric kettle and regard it strictly a "tea" kettle. This despite its ious application to serve the needs of int coffee drinkers with which the U.S. unds.

Many Americans see the electric kettle the first time when vacationing in Can," said Mr. Dodds. "We know this from ers we receive asking where they can be ained. Others who have bought kettles 's earlier seek information on where to buy acement cords."

Mr. Dodds said the kettle remains relatively nown in the U.S. because major electric iance manufacturers there concentrate on keting such mass products as electric shoe shers, carving knives, can openers and n brushes. Canadians can perhaps be exd if they tend to regard their counter top es as harder to live without.

Itro Electric, Orangeville, is another com- exporting kettles to the U.S., marketing its product line under a variety of retail house labels. The company considers it made an important breakthrough last year by persuading Sears-Roebuck to include the kettle in its catalogue.

President-manager Bill Haward believes that exiled Canadians are one of the keys to accelerating the growth rate in U.S. kettle sales. A recent report estimated that 300,000 Canadians live in the California area alone.

"Canadians not only represent a sizeable market in the U.S., but if Americans see the efficiency of electric kettles used in their homes, they will undoubtedly catch on."

Early British pioneers brought to Canada not only their preference for tea as a beverage, but blackened wood-fire kettles to ensure a good cuppa'. To the Englishman, of course, the necessity of a kettle in the home is matched only by the need for the tea pot — or even a wife for that matter. As well as the sophisticated electric model, which Britons have embraced with some enthusiasm, the whistling kettle, which is brought to the boil on the stove, is still a common household sound over 'ome.

The vaporizer-kettle combination is a modern-day version of the "croupe kettle" for treatment and relief of respiratory tract congestion that responds to dense steam vapor.

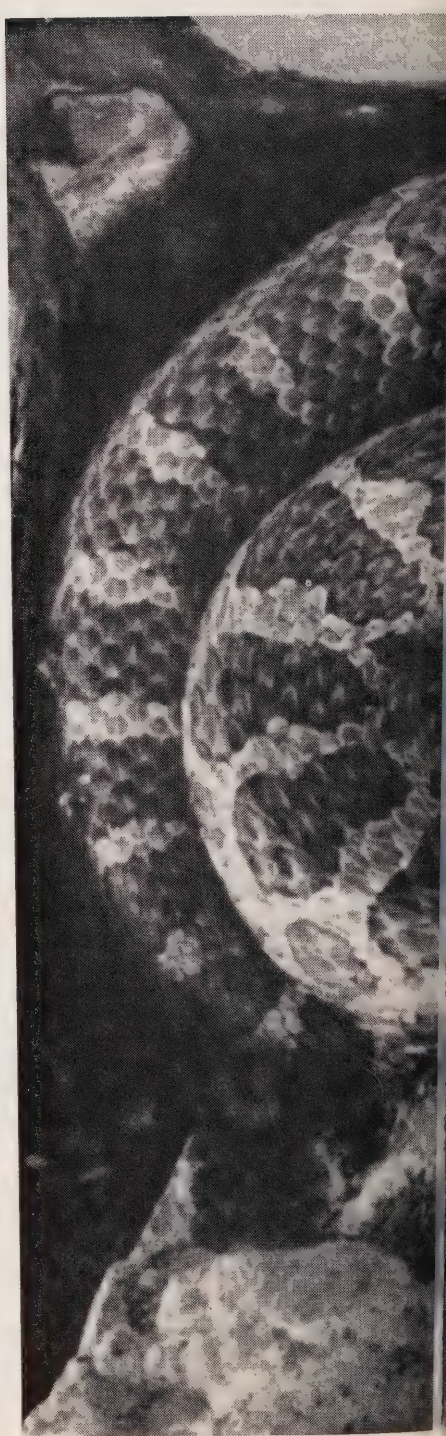
Credit for the wide use of the electric kettle in Canada is largely due to the vigorous promotional and demonstration programs by electrical manufacturers and others. Although by no means limited to making tea, the electric kettle is recommended by the Canadian Tea Council as the most efficient method to provide "fresh, bubbly boiling water" for a good brew.

Instant tea, a comparatively new development, represents an estimated two-and-a-half per cent of the tea consumed in Canada. But, auguring well for further exports of electric kettles, it is catching on at a faster rate in the U.S. where it originated. Instant tea is manufactured by brewing to a high concentrate and spray-drying it in similar fashion to instant coffee, which represents 16.2 per cent of the coffee processed in Canada.

In the business for the past four years, the sole Canadian company manufacturing instant tea reports a jolly good build-up in exports to Britain. Which should hasten the cricket adjournments at Lords by at least four minutes. □

# meet dimples the massasauga

by DON WRIGHT



We watched fascinated as the tiny white mouse was lowered carefully into the glass case where two massasauga rattlesnakes lay ominously coiled—one with its head raised and its mouth slightly open.

Neither reptile moved as the furry little rodent touched the sand bottom of the case. Sniffing the air for a moment with its soft, pink nostrils, the mouse moved a few inches toward the poised and poisonous snake.

Nearer and nearer it approached until, as if aware of the situation for the first time, it suddenly darted forward. To the horror of the York University biologists, it bit the massasauga hard on its mottled flank.

No wonder the staff was concerned. Good healthy massasaugas are, understandably, in short supply and they were afraid this one, affectionately called Dimples, might contract an infection from her dinner turned diner.

This rather unusual turn-about is not meant to suggest that rattlesnakes make good house pets. Dimples eventually did get hungry. But it's one way of dispelling the popular misconception of the massasauga as a fire-breathing, belligerent dragon who would rather rattle and fight than relax with a good mouse.

Given due warning, the massasauga will go out of its way to avoid an encounter with man. On the other hand, it is dangerous and can be deadly so that it behooves us to know something about our only poisonous snake and to see it in proper perspective.

The massasauga finds the shores and islands of Georgian Bay much to its liking and it ranges 20 miles or so inland. It is also found on the Bruce Peninsula and along some parts of the Lake Huron, Lake St. Clair and Lake Erie shores.

Swamps and bogs are its favorite haunts, where it can obtain frogs, but it may also be found in rocky outcrops and in meadows on the lookout for mice. Nor is it uncommon to find this small rattler some distance out in the water—a situation which does not seem to affect its ability to bite.

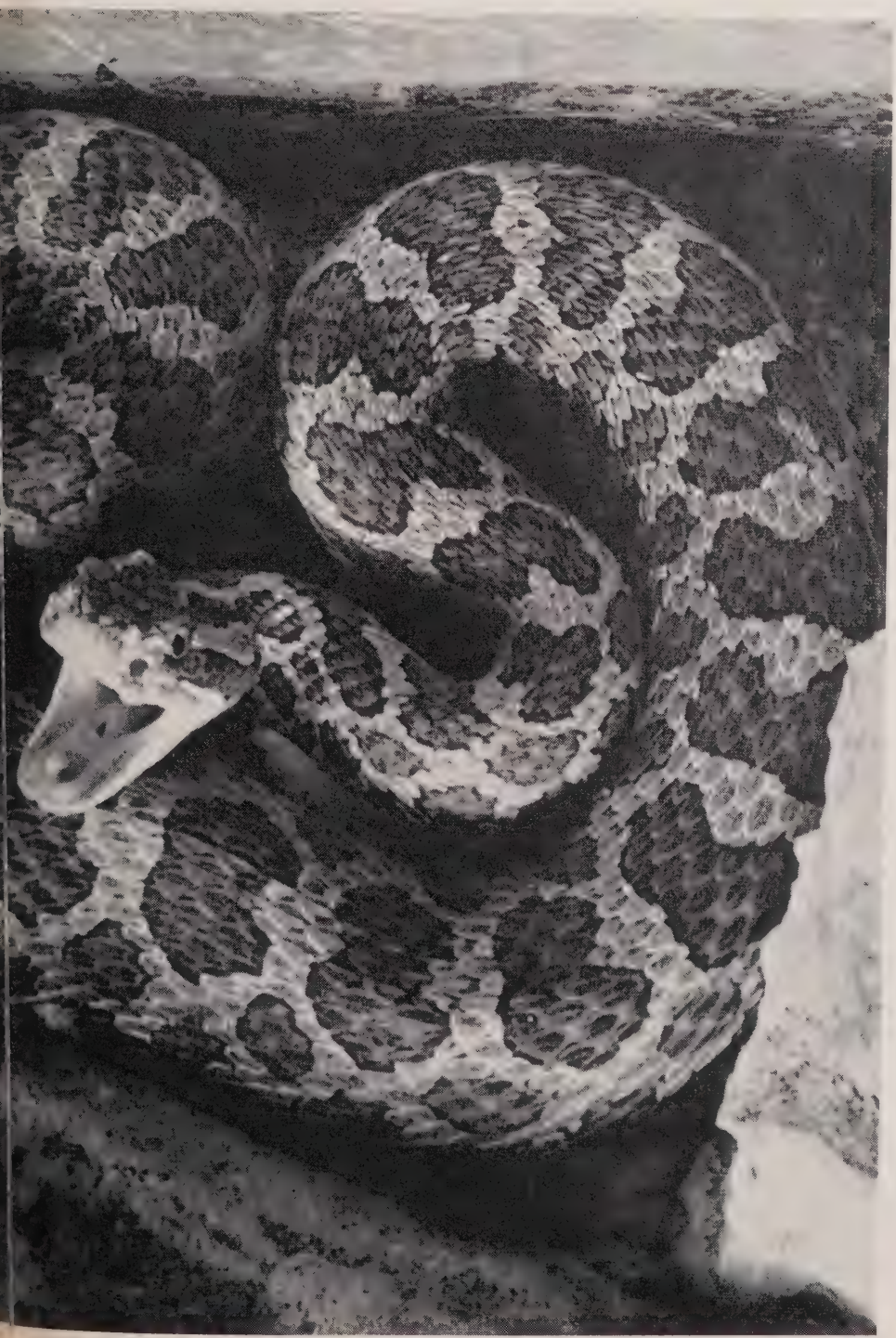
While it is impossible to estimate the massasauga population, the concensus among the experts is that it's on the decline. One doesn't talk snakes very long in these parts before the name E. B. S. Logier comes up in the conversation and we asked him for his thoughts on the matter. Associated with the Royal Ontario Museum for almost half a century, and curator of reptiles for 10 years prior to his recent retirement, Mr. Logier says he has been intimately acquainted with the Georgian Bay area most of his life and in that time he has only been able to collect about half a dozen rattlers for study purposes.

"If there have been more reports of sightings recently," he points out, "it is because their territory is being increasingly invaded by tourists. Blasting associated with road building and other construction will stir them up and get them moving but their number can only decline as man's increases."

The author of "Snakes of Ontario" and "Reptiles of Ontario", Mr. Logier points to two passages in the diary of Mrs. John Graves Simcoe, wife of the first Governor of Upper Canada, to support his contention that the snake is growing more scarce. Written in 1795, one entry reads: "Mr. Jones, the surveyor, says seven hundred rattlesnakes were killed near Burlington Bay this summer." The other refers to the construction of the Dundas road: "I hear they kill rattlesnakes every day—yet not a man has been bitten although they have been among them for six weeks."

Later evidence suggests that the chances of being bitten by a rattlesnake in Ontario are about equal to the likelihood of being struck with lightning.

she's mild-mannered and rather sluggish but doesn't like to be stepped on.



Dr. M. A. Hopkinson, resident physician at Lion's Head on the Bruce Peninsula, who has developed an interest in the reptile over the years, estimates there have been 44 authenticated cases of rattlesnake bite in the province over the last 10 years. Of the 27 he has personally treated, none were fatal, and he has administered antivenin in about 50 per cent of his cases.

Statistically speaking, you are more likely to die of a bee sting than a rattler bite.

Only two deaths attributable to the massasauga have been recorded in Ontario in modern times. The first occurred near Honey Harbour in 1956 when a woman picked up a young massasauga that was swimming near a dock, mistaking it for a baby water snake. A specific antivenin was not available at the time and she died in hospital eight days later in spite of vigorous treatment.

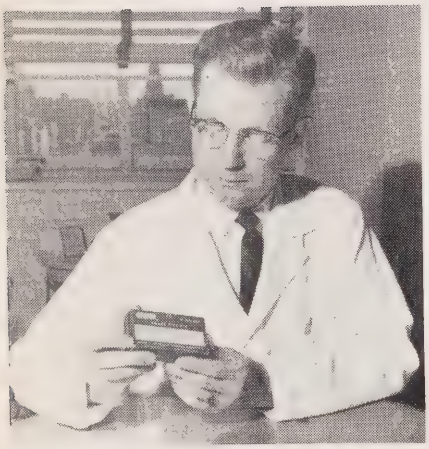
A 10-year-old girl was the only other fatality. She was bitten while vacationing on an island in Georgian Bay and she died very quickly without having received the antivenin.

Hydro's experience supports the theory that the rattlesnake danger is grossly exaggerated. In all its history of line and station construction and right-of-way maintenance in rattlesnake country, not a single case of venomous snake bite is to be found in the records.

Bill Watkins, formerly personnel officer on Hydro's extra-high-voltage transmission line project which, at one point, slashed through the heart of massasauga territory, told us that quite a few had been stirred up in clearing and construction, but one near miss was all he could report.

"One man almost stepped on a rattler in climbing over a log," he recalls, "but it only brushed his leg. We did see several in one field near a line camp and on a few other occasions but we are equipped to deal with an emergency and I know the highways are ten times more dangerous than all the snakes put together."

Hydro's perfect batting average with the massasauga stems partly from the timidity of the snake itself and partly from the preventative measures the Commission insists upon.



*Dr. R. B. Trewin*

Providentially, a man who has had considerable experience with the massasauga is assistant director of Medical Services. Long interested in the science of biology in its wider aspects, Dr. Bruce Trewin helped finance his medical school by looking after the laboratory animals and reptiles.

He recalls one instance where a massasauga somehow slipped out of its glass case and, loose in the laboratory, posed something of a problem since it could, conceivably, escape down a heating duct and into an unsuspecting world. Then, as now, the creatures were relatively hard to come by so that harming it was out of the question. Somehow he managed to pin it down and holding it near the head with his bare hand, returned the snake to captivity. He remembers being surprised at its strength and determination to remain at large.

But Dr. Trewin states very emphatically that "bring 'em back alive" techniques are not for the amateur. "We recommend that the men leave them strictly alone," he says. "In all known cases, persons bitten have interfered with the snake, usually inadvertently, but the massasauga is not aggressive. At the same time, it will put up a plucky fight when cornered and strike very swiftly. Anyone deliberately tracking them down is leaving himself open for a wound."

Bulletins issued to all work crews in rattlesnake country by Hydro's Medical Services stress common sense procedures. Heavy high boots and loose trousers are recommended and care is urged in stepping over logs and in placing hands in concealed places, particularly at night when picking up wood or other objects.

Simple, low-cost snake bite kits are issued to the crews and although they have yet to be used, they could prove invaluable in instances where there is any delay in obtaining medical assistance. They include a rubber suction cup for extracting venom, a sharp blade for incising the area of the wound and a light tournequet to help retard the venom's spread.

Dr. Trewin points out that antivenin is now available at hospitals throughout the massasauga's range but he emphasizes that this antidote is only one aspect of the prescribed hospital treatment. Complications from the serum itself is one consideration the attending physician will bear in mind. The relatively new cortico-steroids can be an extremely effective part of treatment.

The Hydro doctor also advises that a person bitten by the rattler should remain as quiet as possible since physical activity will only stimulate the venom's spread. And persons toting their own favorite brand of snake bite remedy for internal administration should forget it. Alcohol is one of the "don'ts" in treatment.

While the massasauga is Ontario's only poisonous snake (the timber rattler formerly found in the Niagara gorge area now generally being considered extinct), there are three other harmless snakes sometimes mistaken for the rattler. These are the fox snake, the milk snake and the hog-nosed snake.

Adding to the confusion, some of the harmless varieties frequent the same areas as the massasauga and will vibrate their tails, emitting a buzzing sound particularly if confronted in dry leaves. The hog-nosed snake puts on an especially convincing act but his bark is far worse than his strike.

What is the surest and fastest way of identifying the massasauga? Mr. Logier says its rather blunt tail, terminating in the distinctive rattle, sets it aside from all other Ontario snakes whose tails taper to a point. It's rather small, adults seldom exceeding two-and- to three feet in length, but even as a ba bite is venomous.

Not particularly colorful, the massa has a grey or brown background with blotches down the back and sides. It triangular-shaped head, narrow neck, ar be positively identified by two pits or in tions between the eyes and the nostr characteristic of its family — the pit And if you feel like getting down and lo it in the eye you will find its has vert elliptical pupils as opposed to the round of the harmless Canadian snakes.

But you would be infinitely wiser to tak Logier's advice. "If you come across a s snake in rattler territory, give it a wide b he says. "The rattle is more of a buzzing and could be mistaken for a bee or a c In any event, don't count on the rattle to you. Sometimes they strike first and rattle wards."

"Give us one good reason why we sho set out to exterminate all of these nast vipers," we asked Mr. Logier. He gave u

The first was a matter of self preser "Why expose yourself to unnecessary he asked, "when all the massasauga wan be left alone? Naturally, they cann tolerated around camp or cottage."

His second was the classic reply of th servationist and biologist. "Extinctior species is final," he said, "and we owe it descendents to leave something more th served specimens for them to observe f aesthetic, scientific and historic interc creatures play a role in the balance of and extermination of a species has usua the result of ignorance, prejudice or gr

Like his fellow naturalists, Mr. Logie he is bucking a prejudice instilled since Biblical times when the serpent was el represent satan. And he believes that of snakes is not hereditary but is pa by word and example from genera generation. Essentially a realist, Mr. feels that knowledge will overcome tion and that common sense will prev senseless fear.

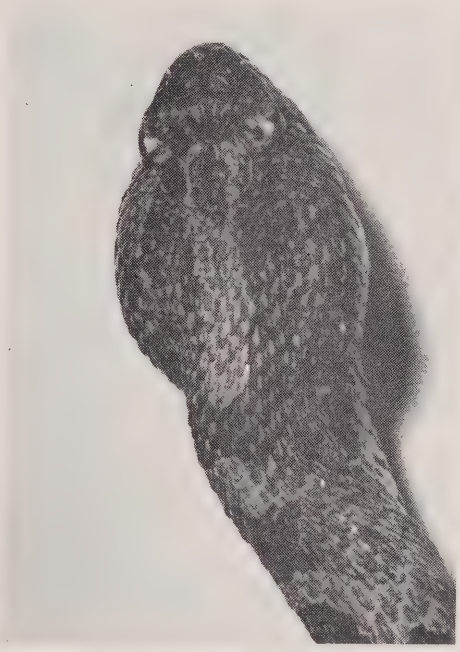
## how to recognize the massasauga

The photos at right illustrate two features of the massasauga which set it apart from the other snakes of Ontario. It has a wedge-shaped head with a distinct narrowing at the neck, and its tail ends in a blunt rattle. All other snakes in Ontario are harmless and their tails taper to a point.

Other identifying features include two distinctive pits between the eyes and nostrils, and eyes with vertically-elliptical pupils—as opposed to the round ones of harmless snakes.

Its markings and color are not so distinctive as to set it apart at first glance from other snakes. Fully grown, it will measure from two to three feet in length.

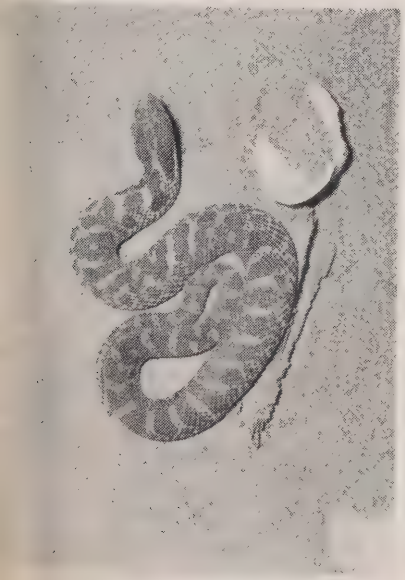
Best advice: give a wide berth to any spotted snake you might come across in massasauga territory.



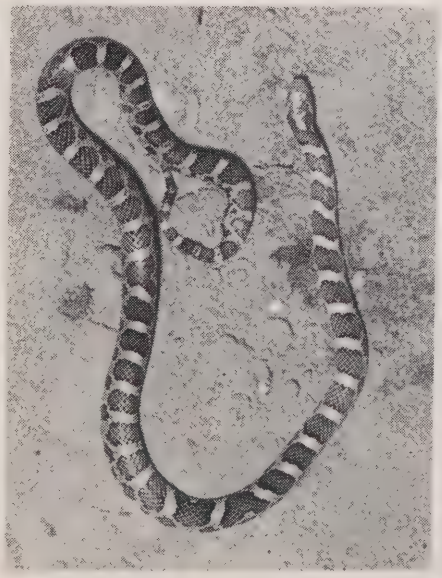


## hese snakes are harmless

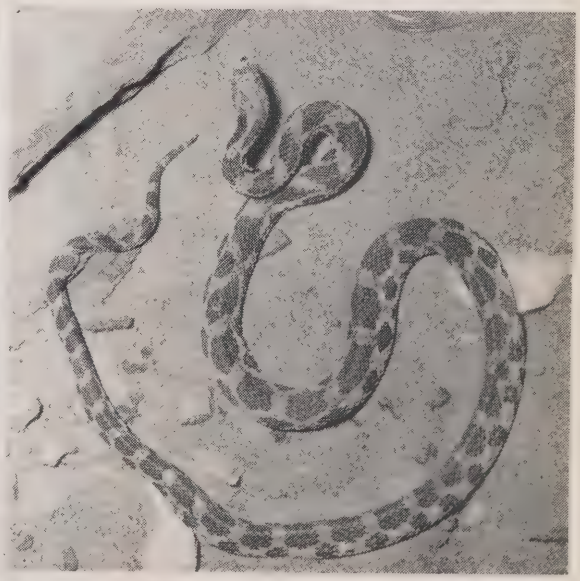
*og-nosed snake*



*milk snake*



*fox snake*



PHOTOS COURTESY ONTARIO DEPARTMENT OF LANDS AND FORESTS.

# dusting off the past

Brass bands, bunting and general hoopla will be much in evidence during next year's Centennial celebrations. And if the fanfare helps instill Canadians with an appreciation of their heritage and strips away some of the musty odor many of us associate with history, we will be left with a Centennial hangover of considerable value.

In following the threads woven into the fabric of our nationhood we will discover how the stable institutions of today were the upstarts of yesterday with a romance, color and intrigue only faded with familiarity and the passage of time. Hydro in Ontario is a case in point and the 358 municipal electrical utilities in the Hydro "family" are taking steps to assure that the epic of electrical supply is preserved for posterity. They are digging deep into the files and records to reconstruct their history for the Centennial Hydro Hall of Memory.

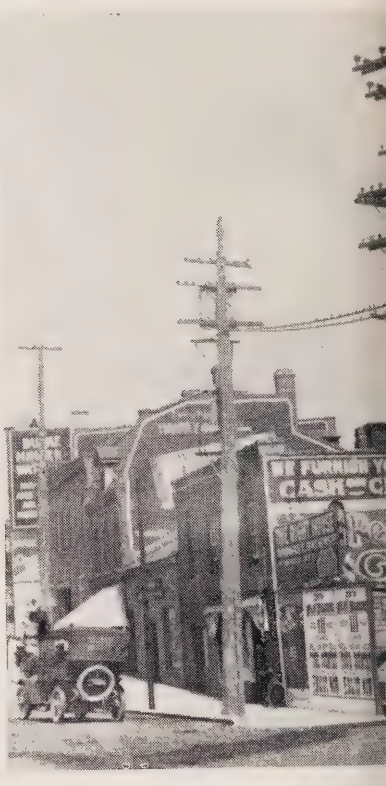
To be located in the Sir Adam Beck No. 1 plant at Niagara Falls, the projected Hydro Hall of Memory will have as its theme "Public Power and its People." It will be sponsored jointly by the Ontario Municipal Electric Association, the Association of Municipal Electrical Utilities and Ontario Hydro. As well as depicting early developments in the generation and distribution of electric energy, it will pay tribute to the men who foresaw the role electricity would come to play in the economy of the province.

Highlighting the entire project, and serving as a permanent reference for those seeking insight into the electrical history of a particular area or municipality, will be the accounts presently being assembled by the individual utilities. Each will delve back to the earliest use of electrical energy, trace the origin of Hydro at the local level and describe the key people in its development.

In the process, many of these Ontario utilities are rediscovering how the geographical location of their communities was determined by the proximity of swift flowing rivers and streams suitable for driving water wheels. These were coupled by a system of belts and pulleys to primitive milling and sawing machinery—frequently the first step toward commerce and industry in a new settlement.

*Upper left: Orillia's first street lights installed in June, 1915. Right: Colb Street in Brantford looked like this in Lower left: Port Arthur during an Oc evening in 1912. Right: Walkerville lig standards were considered elegant in*







tilities across the province are contributing their chapters to the history of hydro in Ontario

The town of Perth, southwest of Ottawa, is example of this pattern of development, hough it deviates somewhat in that the first tlers, being Scotsmen, erected a tavern as eir first commercial undertaking. At the same ne, three water power developments on the y River provided an early source of power to e town and records show that an electrical nt was installed at Ritchie's Rapids in 1886 supply an arc lighting system.

A woollen mill on the same river was also oducing electricity by 1897 and this power s utilized both for lighting and for pumping ter—a relationship between early electrical velopment and a concern with fire which med to have existed at the municipal level many instances. In the case of Perth, the esight of the town fathers is suggested by s item in the July, 1897, issue of Electrical ws:

"Last week the town of Perth, Ontario, was ted by the largest fire it had experienced e its existence. The new waterworks was to a practical test and worked admirably. e water pressure remained perfectly steady even. This is, we believe, the first instance anada where the waterworks pumps were trically driven and from the satisfaction n at Perth by the use of electrical appara- other cities with waterworks operated by eam plant, and where electrical power is lable, will no doubt sooner or later adopt use of electricity."

he path of electrical development followed erth has also been shared by other munici- ties in that it owned its own hydro-electric ts, supplemented them with steam-electric eration and, as its power resources became equate in the face of growing demands, ed its own utility commission and pur- ed power from Ontario Hydro.

range bed-fellows, perhaps, gas and electri- were sometimes supplied by the same le. In Guelph, for example, the Guelph Company rebuilt a flour mill on the Speed r and in 1887 installed dynamos for arc t lighting. That same year it produced r under the name of the Guelph Electric t Company. The tangled skein of private public ownership around the turn of the century is also being unravelled by the municipal Hydro historians, and some are finding an interesting parallel between competition for markets among the early electrical utilities and that presently being waged with the gas suppliers.

"Many people assume that municipal ownership of utilities was something that sprang up with the advent of Ontario Hydro in 1906," observes R. N. Beattie, office service manager of Ontario Hydro's Secretarial Division, who has compiled background material on some of the electrical utilities. "This is not so. Many municipalities successfully owned their own power plants and distribution systems prior to Hydro's advent. What really occurred in 1906 was the beginning of municipal co-operation throughout the province in the production and distribution of electricity."

And while the Hydro concept of public ownership was launched at the insistence of the municipalities, it was strongly opposed by the private power interests who commanded a strong following—a situation which added considerably to the color and drama of early Hydro history. Controversial editorials of the day suggest that newspaper files can be a rich source of material for the local Hydro historians. More mundane, perhaps, but important locally are the statistics they are assembling on electrical use, revenue, customers, rates and the utility people whose leadership kept the municipalities in step with progress.

Old newspaper advertisements and photographs add color and credence to the story of electrical power in the cities and towns of the province but some who have been delving into the Hydro past express surprise at the dearth of photographs.

William Rattray, Ontario Hydro's photo feature editor and a man who has researched much Commission history, explains that many of the old time photographers neglected to wash negatives and prints properly so that both tended to discolor and deteriorate with time. On the other hand, he has turned up some excellent photographs of considerable age, attesting to the care some of the old-timers took in their processing.

In Goderich, where the PUC ran into difficulties tracking down historic documents and photographs, an appeal was made to the public through the newspapers. Frequently, the scrapbooks and photo albums of senior citizens can be tapped by publicizing the search.

Aside from the newspaper files, the amateur Hydro historians have been finding local libraries and the municipal records a good source of material. Ontario Hydro is lending a hand by researching back issues of electrical trade papers and forwarding pertinent items to the utilities concerned.

The London and Port Arthur utilities have recruited former managers to compile their histories. Dr. E. V. Buchanan, a former friend and neighbor of Sir Adam Beck, is undertaking the job in London while R. B. Chandler, an authority on electrical development in the Lakehead area, is at work on the Port Arthur story. Others are turning to journalists and to teachers and university students with free summers to get things rolling.

Petrolia PUC has persuaded the local newspaper editor to write the electrical history and plans to get extra mileage from the project by printing it in booklet form for distribution to all customers.

As Dr. V. S. Wilson, chairman of the joint Hydro Centennial Committee pointed out in a letter to the municipal utilities, "It is strongly urged that the services of an experienced writer be retained by your utility for the assembling and writing of the story which will be recorded permanently in the Hydro Hall of Memory." While the letter assured the utilities there was nothing mandatory in the request for histories, it said "It was the desire of the Centennial Committee that each municipal utility take advantage of the opportunity to tell its own story—the story of its origin and development as part of the system."

And so, with the Centennial year fast approaching and the Hydro Hall of Memory scheduled to be formally opened during the next joint annual meting of the OMEA-AMEU, in February, the task of separating fact from fancy in reconstructing the past proceeds across the province. If the experience of London's Dr. Buchanan is any criterion, the work is exacting but fascinating—and anything but dull. □

# green acres

## nary a dandelion mars these 1,000 acre lawns.

This is the time of year when the lawn acts like it was sprinkled with hair tonic and keeping it from achieving the beatnik look calls for a strong constitution and a sharp mower.

Transform that scraggly patch of merion blue into a thousand rolling acres of cushiony green and the average householder would head for the psychiatrist with an acute case of peat moss and fertilizer psychosis. But that's the size of the large turf nurseries which have sprung up in Ontario of recent years—where tons of grass seed is blooming into a million-dollar industry that's still in its infancy.

Landscaping, as anyone who has waited in line for a bag of bone meal, a mophead catalpa or an early-blooming weigelia can testify, has become big business. And like most other lines of endeavor, it's changing and improving. Lawns are an example.

"In the early 1950s," says Frank Watt Junior, president of the Nursery Sod Growers' Association of Ontario, "only one home-owner in 10 would lay sod, which usually came from a farmer's field. The rest would rely on the frustrating procedure of cultivating and seeding, with the odds stacked in favor of the opposition—the birds and the elements."

Since then the ratio has been reversed with "instant grass" just as popular as minute rice and other space-age conveniences.

The demand for sod in the booming metropolitan areas is so great that many turf growers are hard pressed to meet their commitments. And the market isn't limited to Ontario. Some make regular shipments to New York State, Michigan, Ohio and even as far as Nova Scotia.

Fifteen years ago, there was only one large commercial sod farmer in the province—Ruthven's in Alliston. Now there are 20 in the Sod Growers' Association whose members handle an estimated 75 per cent of the business in the province. The largest are in the Alliston, Beeton, Waterdown areas and like their cousins, the more conventional dairy, beef and poultry businesses, they are highly mechanized and efficient operations. Most sod nurseries even maintain their own fleets of trucks equipped with two-way radios to expedite deliveries.

Typical of a high production turf operation is the McCague Merion Sod Company at Alliston where 935 acres are in sod. Owned by George McCague, who also runs a modern beef farm, a successful real estate business and finds time to serve as warden of Simcoe County, the sod operation is mostly merion blue. Mr. McCague points out that sod is a two-year crop and that the 400 acres to be cut this year were seeded in August, 1964.

Supplying markets as far removed as Erie, Pennsylvania, and Sault Ste. Marie, Ontario, the McCague company employs 25 men whose chief task is cutting and rolling sod. Mechanized sod cutters, set to cut at 81-inch lengths, knife through the grass roots at depths ranging from a quarter to a half inch. Sod in Ontario is sold by the square yard.

"Sod growers have been criticized in the past for robbing the land of its top soil," says Gunter Beder, owner of a 1,000-acre nursery at Beeton. "They would have you believe that only a desert will be left after a few years' operation. This is nonsense.

"When good turf is cut," Mr. Beder explains, "very little top soil is picked up as the root systems extend thickly into the ground almost a foot deep. Strong, fibrous roots are a sign of good turf," he told us, shaking out a roll of sod like a fastidious housewife shaking a rug. Inferior sod would tend to break up under such treatment.

Like all commercial growers, Mr. Beder pampers his grass with fertilizers and herbicides to produce healthy, weed-free turf. He also practices crop rotation with his neighbors, exchanging sod fields for fields where potatoes were grown, in the interest of improved soil.

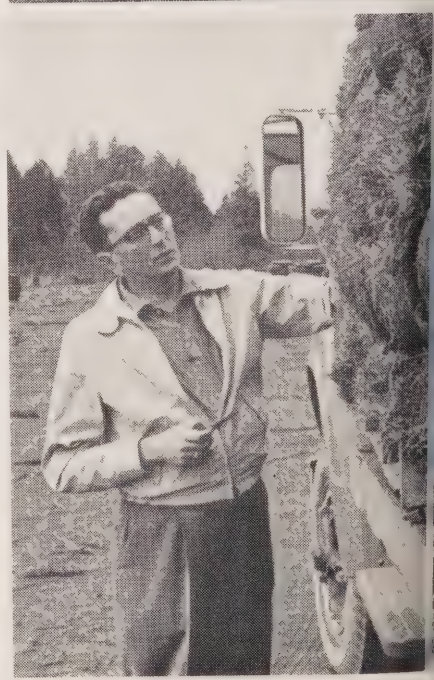
At the Beder turf nursery, most of the sod is grown on sandy loam but some merion and beeton blue, a blend of blue grasses, is being cultivated on rich black peat loam. This muck land, irrigated with up to 600,000 gallons of water a day, is producing a grass lush enough looking to adorn a salad plate.

Still in the process of being cleared, these lands are irrigated with a portable system of aluminum pipes on wheels. The pipes can be rolled over the fields with a minimum of effort. With heavy fertilization and watering, this turf can be cut and sold in as little as six months.

Bulkiness and weight are the chief limiting factors governing the long-distance marketing of sod. "We are trying to solve this problem by having our sod vacuum dried at a nearby processing plant," Mr. Beder points out, "and it's showing great promise. The vacuum process reduces both the air and moisture content of the sod, yet keeps the turf in good condition all through the journey." He will be shipping turf for a centennnial park project in Halifax this summer.

Today, most of the certified grass seed sold in North America is produced in the Oregon,





*Irrigation is a vital aspect of sod farming as this view of the portable sprayers at the Beder Turf Nursery indicates. Cutting is largely mechanical but rolling is done by hand. Farm, below, is the McCague Merion Sod Company near Alliston.*









*George McCague, far left, nurseryman, cattle raiser, realtor and warden of Simcoe county, has 935 acres in sod. Gunter Beder is shown, centre, inspecting his high quality sod. It should be thick and tightly interlaced. Fork lift trucks have eased the burden of manual labor in sod farming. Each roll weighs about 35 pounds.*

*Turf nurseries like the McCague and Beder operations equip their trucks with two-way radios to speed delivery. Orders are issued to field from a central office.*



Washington and Idaho regions of the United States where an ideal combination of rainfall and sunshine results in a superior product. Small amounts are being produced in Western Canada. All grass seeds are processed by combining, just like other grains.

In Ontario, merion sod is the largest seller but there is a steady demand for mixed bluegrass and bluegrass fescue which are used for home and industrial lawns, parks and playgrounds. Fescue does well in partially shaded areas. The fine turf used for golf and lawn bowling greens is usually bent grasses—fine but finicky to maintain.

And what do the professional grass growers recommend in the way of home lawn care? Sodded lawns can be laid any time from mid-April to December in our climate, they say. The area should first be cleared, levelled, and if the soil is poor, two to four inches of top soil added. Fertilizer in the form of 20 per cent superphosphate, lightly raked in just before sodding at the rate of 15 to 25 pounds per 1,000 square feet, will help promote healthy root growth.

Dry soil should be watered lightly before the sod is laid. Once down, the sodded area should be rolled to eliminate air spaces and well watered within one hour of laying. The watering process should be carried out at least weekly during the first month.

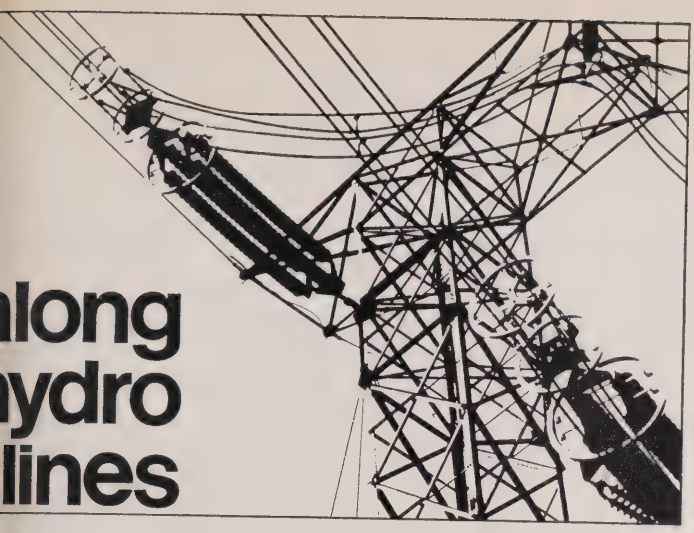
For general lawn care, the experts advise us, the most important work is carried out in the spring. A light rolling is recommended to counteract the winter heaving of the roots. Nutrients should be added at least four times a year—the best times to fertilize being early spring, late May, early July and early September.

Mowing, of course, is something that can't be avoided and the nursery turf growers stress that the greatest danger in this operation is cutting too short. They maintain that lawns should never be mowed lower than one-and-a-half inches in spring and fall, and not under two inches in summer. Sharp mower blades are considered a necessity as blunt blades tend to bruise and tear the grass.

But they have one comforting word for the perspiring domestic greenskeeper. Regular raking should be avoided. Clippings left
lawn add to soil fertility. The amat
also console himself with the knowledg
thick lush lawn is the best way to dis
weeds.

And if he sometimes gets discourage
direct his ire at his ancestors who sta
whole business. The grass we use for o
and parks isn't native to North Amer
tiny seeds made the Atlantic crossing w
English and European immigrants—e
liberately or in the nooks and crannies
luggage and clothing. First sown a
eastern seaboard, the wind, birds a
natural carriers soon spread the gre
land.

When the pioneers, after pushing t
across the Appalachian Mountains,
Kentucky, they were delighted and a
find thick carpets of green on the pl
and lightly forested areas. They calle
tucky bluegrass, little realizing it was
variety they had known back home.
seeds had successfully overcome the
barrier years earlier.



# long ydro lines

## r he's a jolly good fellow

s "goodby" on the one hand and "glad to have you back" on the as the many Hydro associates of W. Ross Strike bid him a reluctant ell while his friends and neighbors in Bowmanville gave him a rousing me home. Both events demonstrated the esteem in which "the boy Bowmanville" is regarded by the many who know him.



*ch from the OMEA*



*May the Great Spirit be your guide*



*by Harry Leeming, retired Hydro director of engineering.*
*d Mrs. J. E. Wilson join Mr. and Mrs. Strike in admiring portrait*

trike retired as chairman of Ontario Hydro, March 31, after 34 years ce at the municipal and provincial Hydro levels.

than 250 persons called to offer Mr. and Mrs. Strike their best at an informal "welcome home" reception held at the Lions' Com- Centre in Bowmanville. He received a scroll, signed by Mayor Ivan on behalf of the townsfolk, which read: "On the happy occasion of ecoming, all his friends extend a most hearty welcome to W. Ross Q.C., after an interval during which he has been the main generator heat and power in Ontario."

To say farewell, almost the entire OMEA executive boarded a bus in Toronto, after an afternoon business session, and journeyed to Bowmanville to join a special association tribute to Mr. Strike.

In making a presentation on behalf of the OMEA, P. R. Locke of St. Thomas, who has been a friend and associate of Mr. Strike through most of his long Hydro career, paid tribute to the "powerhouse of leadership" the retiring chairman provided in Hydro affairs, the church, and in community service. In recalling former leaders and events in the Hydro saga, Mr. Locke called it the "Hydro super-drama — a drama in which you emerged as the star."

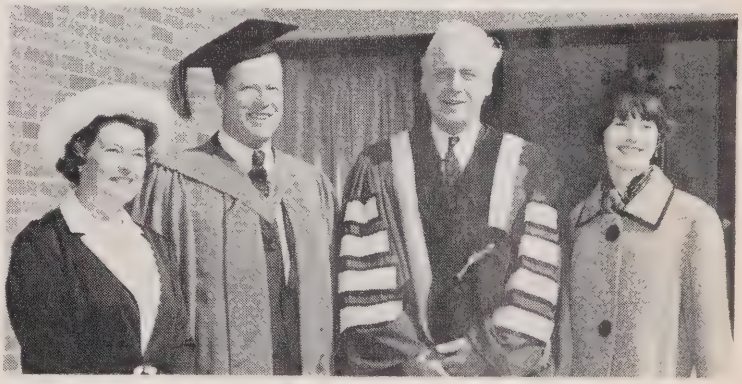
Dr. R. H. Hay of Kingston presented roses to Mrs. Strike on behalf of the association — "in grateful appreciation of their steadfast support of the association and devoted service to the whole Hydro family". In wishing Mr. Strike a long and happy retirement, E. F. Burbank, AMEU president, reminded the audience that Mr. Strike had received the president's medal and therefore belonged to the AMEU as well as to the OMEA.

Even the Indians had a good word to say for the retiring Hydro chairman. John Barnes of Sarnia, dressed in his regalia as an honorary chief, brought a message from the Chippewa Indians of the Sarnia Reserve. It read in part: "Your untiring devotion to Hydro has given our people a greater appreciation of what electricity means to Sarnia and its environs. May the Great Spirit be your guide."

In reply to the many accolades, Mr. Strike said he felt very secure and very grateful in being able to leave Hydro in the hands of such capable people, both municipal and provincial. "The hands at the helm are as strong as any we have had", he said, "and Hydro is only at the threshold of its development. It has a great contribution to make and I will be cheering you on."

Other speakers included John McMechan, chairman of Toronto Hydro; and H. F. Baldwin, chairman of Oshawa PUC. OMEA President Dr. J. E. Wilson was master of ceremonies. □

## Hydro Chairman receives LL.D.



*Even the weather smiled on this memorable occasion.*

Granting its own degrees for the first time at a colorful convocation in June, Toronto's York University marked the occasion by conferring honorary degrees on five distinguished Canadians and a noted British educationist. One of the four receiving honorary Doctor of Laws degrees was George E. Gathercole, Ontario Hydro chairman, who is shown in the photograph after the ceremonies with Mrs. Gathercole; Dr. Murray Ross, president of York University; and daughter Lynn.

Mr. Gathercole is a graduate of McMaster University (B.S.) and the University of Toronto (M.A.) in economics. He organized the Ontario Government's Department of Economics and was its chief economist for more than 17 years during a period of unprecedented industrial expansion.

Other Canadians receiving this honor at the York ceremonies were Dr. John Deutsch, chairman of the Canadian Economic Council; Mrs. Ruth Atkinson Hindmarsh, president of the Atkinson Charitable Foundation; and Colonel R. S. McLaughlin, chairman of General Motors of Canada Limited.

The Right Honorable Lord Annan, provost of King's College, Cambridge, who delivered the convocation address, and Canadian artist Harold Town both received the degree of Doctor of Literature. □

## Dr. Hambley heads engineers

Dr. J. M. Hambley, Ontario Hydro general manager since 1960, was elected president of the 20,000-member Engineering Institute of Canada at the annual meeting in Winnipeg last month. With 60 branches from Newfoundland to Vancouver Island, the Institute promotes the advancement of Canadian engineering, nationally and internationally.

In accepting the honor, Dr. Hambley told delegates "The Institute effectively provides for the corporate expression of a national purpose for engineers, a sense of social direction and professional identity for all of us wherever we as individuals may be meeting the needs of our day.

"Engineers by their training tend to concentrate upon the immediate details of the problem in hand, to isolate themselves with the physical facts with which they must contend," he said. "They must, however, live with the things they create and they accordingly have the duty as citizens to concern themselves with the aesthetic, economic, social and historical implications of the things they do."

Looking into the future, Dr. Hambley said it was important that the Engineering Institute be vocal in shaping scientific, social and political policies that would strengthen and improve the national and international stature of Canada in her second century. □

## Big day at Nepean



*A Centennial celebration for each family.*

Ceremonies marking two important events in the short history of Nepean Township Hydro, near Ottawa, were held recently on the same day. The first launched the local commission's Centennial lighting project in a big way. At a "light planting" ceremony, Roderick Clack, project officer for the Centennial Commission's community improvement program, said he expected Nepean Hydro's idea "to catch on across Canada."

He is shown placing a tape over the photo-electric cell of the first Centennial lawn light to be installed in the township — demonstrating its automatic "light-up" feature. Looking on are Harry Hargreaves, Nepean Hydro chairman, left, and W. H. Moulton, the general manager.

Under the "light up Nepean" program, Nepean Hydro is making a variety of lawn lights available to customers at cost. Ranging in price from $25 to $50, they may be paid for over 12 months on Hydro bills. A flat installation charge has also been arranged.

This is one way we can make a family affair of the Centennial, explains Mr. Hargreaves, who foresees Nepean householders affixing the Centennial symbol to the lights in ceremonies of their own. And the township apparently agrees with him. To date, more than 700 customers have ordered the lights.

Sod-turning ceremonies were held later in the day to mark the start of construction of Nepean Hydro's $700,000 office and service centre. Among those addressing the large turn-out was D. P. Cliff, first vice-chairman of Ontario Hydro, who congratulated the Nepean commissioners for their initiative in getting established and their aggressiveness in promoting the electrical way of life. □



*Thank you for your skill and workmanship.*

## A million peeled poles

A distinguished group of government, utility and lumber industry rep
tatives gathered in Pembroke recently for a rather unusual ceremo
the peeling of the millionth pole by Herb Shaw and Sons Limited. T
its history back more than 120 years, the Shaw lumber company s
peeled poles to the telephone and railway companies and to Ontario
through Domtar Chemicals Ltd., where they are preservative treated

All poles were peeled by hand until 1946 and the million ma
achieved shortly after the installation of an advanced mechanical
capable of handling lengths up to 60 feet in a continuous flow o
ranging in diameter from five to 20 inches.

Among those on hand for the occasion were Hon. Kelso Roberts, m
of Lands and Forests, and Robert J. Boyer, MPP, second vice-chair
Ontario Hydro. Mr. Boyer is shown presenting a framed certificate
Grace Shaw, vice-president of Herb Shaw and Sons Ltd. It reads, in p

"These poles are a vital component in the supply network linkir
munities of Ontario to our power resources. We gratefully ackno
your skill and excellent workmanship."

## Toronto Hydro executive dies



Jack Ramsay, 52, assistant general manager of Administration and secretary of Toronto Hydro-Electric System since 1963, died in Toronto, June 7. With Toronto Hydro since 1934, Mr. Ramsay occupied various positions in the Consumers' Accounts Department before being posted to the Methods Section in 1954. Two years later he was appointed assistant manager, Consumers' Accounts Department.

In 1957, Mr. Ramsay was transferred to the Executive Department and a year later, named executive assistant, Administration and assistant secretary. He was appointed secretary and assistant to the general manager, Administration, in 1959.

Secretary-treasurer of District 4, Ontario Municipal Electric Association, since 1958, Mr. Ramsay wa
member of the Association of Municipal Electrical Utilities, the
Club of Toronto, the Administrative Management Society and the
Trade of Metropolitan Toronto.

He is survived by his wife Christobel and two children, M.
Douglas.

## ›wer for Foleyet

Northeastern Ontario community of Foleyet should receive electrical ice by mid-1967, Ontario Hydro Chairman George E. Gathercole anced last month.

e said a 25,000-volt line will be built to link Foleyet with a new power to the Canadian Johns-Manville Company asbestos development, 43 s southwest of Timmins. "A 50-mile, 115,000-volt line will be built veen Timmins and the Reeves Township mine site to supply the power ested by the company," Mr. Gathercole said. "It should be in service by g of next year. Ontario Hydro will build a line from there into Foleyet, ging Hydro service to this district for the first time."

e Hydro Chairman said the cost of serving Foleyet had been prohibitive the recent decision of Johns-Manville to develop the Reeves Township and contribute to the cost of a power line.

tween 125 and 150 customers in Foleyet will receive electrical serv- Cottages and other potential customers along the 15-mile line between nine site and Foleyet will also be able to obtain power, he said.

/e are pleased to be able to move ahead on this project as quickly as ble," Mr. Gathercole said, "and assist in the development of this part e province." □

## ris manager retires

orge Boucher has retired after 31 as the manager of the Paris c Utilities Commission. In ancing the manager's retirement, man Clarence Veigel said Mr. ner had given long years of faithervice and he was particularly to have him go during his term hairman. Former PUC chairman r Griffiths commented that Mr. ner had run an efficient, clean tion. Hydro and water depart- facilities were always kept in lass condition, he said.

Boucher was honored on his re- nt by staff and commissioners social evening during which he ed an inscribed gold wrist □



PHOTO COURTESY PARIS STAR

## dro does it again

o Hydro again won special awards at the 23rd annual conference of merican Public Power Association — this year for its outstanding report and for its power sales activities. The awards were accepted recent Boston meeting by James A. Blay, director of Public Relations. o Hydro has been a consistent winner in various categories of APPA titions. □

## A + ESL = OEL

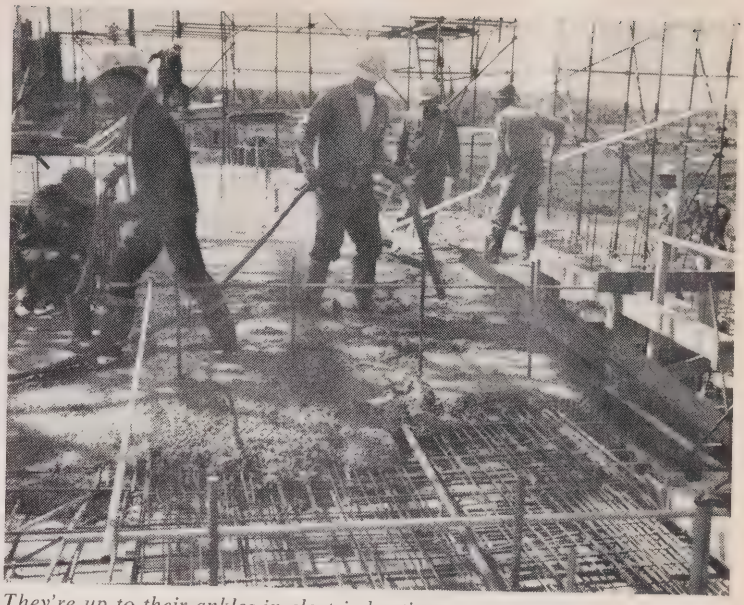
c Heating Association members have unanimously agreed to join with the Electric Service League of Ontario to form a new association alled the Ontario Electrical League.

president A. G. V. Smith said he was immensely pleased with the . "Our aims and objectives were similar to those of ESLO, but our owards the same goals differed. Now we can proceed as one group." Smith noted it is the intention of the new Ontario Electrical League inue adequate wiring programs through Ontario Hydro's marketing "so we can devote most of our time to development of standards ir enforcement in the province."

tors named by EHA to serve on the board of the Ontario Electrical include: K. N. Rumble, Rumble Electric; G. E. Marshall, Canadian lox Company Limited; and J. A. Torrance, Etobicoke Hydro.

oard will consist of three members from EHA, three from ESLO and n Ontario Hydro. D. J. Gordon, assistant general manager, marketing, n named to represent Ontario Hydro. □

## Cable heating at Trent



*They're up to their ankles in electric heating.*

Heating cable for Canada's first all-electric campus is being installed at Trent University's Champlain College, located just north of Peterborough. The cable will be used in special applications throughout the building, in most instances to supplement baseboard heating units. Here, workmen are shown pouring concrete over the newly installed floor cables. □

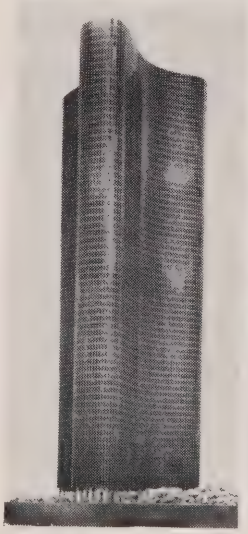
## Reaching to the sky

Kansas City doesn't have anything on Chicago, for everything, electrically speaking, is up-to-date in the Windy City. In fact they're reaching the sky with three major all-electric projects.

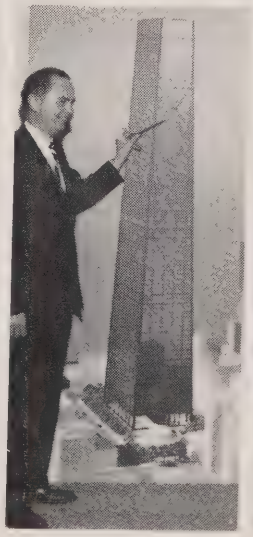
Lake Point Tower, to be the world's tallest apartment building when completed in 1967, will feature 900 electrically heated and cooled apartments. This 70-storey building, said to be the tallest reinforced concrete building in the world, will be 645 feet high.

The towering structure, rising out of a lower level concourse containing a garage for 700 cars, restaurants, service shops, indoor pool and health club, will use about 15,000 kilowatts. Ceiling cable will be used for heating and "through-the-wall" units for air conditioning.

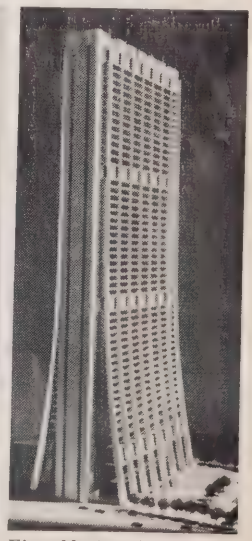
Another breath-taking all-electric building under construction for completion in 1968, is the 100-storey, 1,100-foot John Hancock Center. Approximately one million square feet of office space in the $95 million skyscraper will draw upon specially designed lighting fixtures for heat.



*Lake Point Tower*



*John Hancock Centre*



*First National Bank*

Forming the largest all-electric space conditioning system in the world, the heating systems will be integrated with a 6,500-ton central air conditioning unit.

Chicago's third all electric giant is the 60-storey First National Bank. This 800-foot structure will have power requirements estimated at 23,000 kilowatts.

Commonwealth Edison will supply all three projects. Transformers will be installed on various floors. □

## Higher and higher voltages

The American Electric Power group of companies — a privately owned system serving Virginia, West Virginia, Indiana, Kentucky, Ohio, Tennessee and Michigan, has announced plans for transmitting larger blocks of electricity for more miles than has ever been attempted commercially. The $206 million network would extend some 1,050 miles into parts of five states, and would operate at 765,000 volts, higher than any other operating system in the world.

Plans to go to this voltage are the result of five years of experiments conducted by American Electric Power and Westinghouse Electric Corporation. Construction is scheduled to begin next year and the entire grid, extending from Indiana on the north and west, West Virginia on the east, and Virginia on the south, would be operational by 1972. □

## municipal briefs

**Joseph St. Denis, 96,** a charter member of the Vankleek Hill Hydro Commission and father of Mayor Patrick St. Denis, died recently. Mr. St. Denis, active on the commission since its inception in 1953, was a former MPP for Prescott County and had been active in municipal affairs.

**New quarters** have been occupied by the Electrical Utilities Safety Association of Ontario at 81 Kelfield Street, Rexdale. They include classroom training areas for 40 people. Harry Flack, manager, says that an outdoor training area complete with line sections and other distribution apparatus is also planned. The new premises, covering 6,000 square feet, were designed to EUSA specifications and are located in an industrial complex in Rexdale.

**Gerald Cyr** has been appointed manager of Stoney Creek Hydro, replacing Donald McMillan who has set up a tourist business near Burk's Falls. A native of Sudbury, Mr. Cyr was senior utility clerk at Sudbury Hydro before joining the Stoney Creek utility.

**Superintendent** of Iroquois Hydro for 24 years, Garnet Loucks, died recently.

**Sutton Hydro** is another utility to adopt Hydro in Ontario's "new look". M. G. "Bud" Drolet says their new white service truck is eye-catching and appealing. "It's surprising," he says, "I thought the white would show road dirt. Actually this vehicle is easier to keep clean than a dark truck."

**Sudbury Hydro** has granted Canadian General Electric Company permission to use a photograph of their office building's Christmas lighting display for the company's calendar and literature. "This display must have been popular," quipped Ted Dash, commission chairman. "We had about 120 of our lights stolen in the first few days."

**In a letter to the editor** of Hydro News, Nepean Hydro chairman Harry Hargreaves criticizes the procedure adopted in surveying the utilities for their choice of power costing systems prior to the introduction of the present system by Ontario Hydro on January 1.

... "We were presented with two costing systems," he says, "and the vote was to accept one or the other. The continuation of the 'status quo' was never put to the vote or even mentioned.... The new power costing system may not have been a railroad, but it looks suspiciously like one. This experience should be a lesson to every Commissioner that the present rules regarding voting on major issues should be changed ..."

As the result of a resolution passed by the OMEA at its annual meeting in March, the association's Power Costing Committee, augmented by representatives of the AMEU and Ontario Hydro, is presently studying the consequences of the recent rate revisions. The augmented committee has been instructed to receive delegations from any member municipality that wishes to be heard. Mr. Hargreaves, or any other accredited utility representative, is invited to take advantage of the opportunity.

**Atikoken Hydro** will carry out its own linework in the future. M. H. manager, is hiring three linemen, one of whom will function as fo Linework had previously been carried out by Ontario Hydro.

**Bradford PUC** activated its first locally-owned substation recently. capacity of 6,667 kilowatts, the station cost $45,000.

**S. R. McBrien,** superintendent of Aylmer PUC, was honored recently Canadian section of the American Waterworks Association, recei membership certificate and pin. The utility was also the winner of year safety award.

**Twenty-six** Lakehead businessmen, architects, consultants, school tr and Hydro officials recently travelled to Wisconsin to view a new design concept, at Kimberly. The school, the first in the United St be completely cooled and heated by an electric heat pump, was built i

**Northwestern District** Association of Municipal Electrical Utilities h annual meeting in Fort William recently. New officers elected were Brown, Dryden Hydro, president; E. M. Smith, Fort William Hydro president; Evald Ounpuu, Fort William Hydro, secretary-treasurer. Dir L. W. Oliver, Nipigon Hydro; J. M. Tarling, Ontario Hydro; Orlando Lago Lookout Hydro, and Colin Nicholson, Port Arthur PUC. Safety semin superintendents and foremen were held, along with instruction on installation and use of new equipment.

**Sarnia Electric League** received a glimpse into the future recently Ray Smillie of Bell Telephone explained the laser beam in la terms. Illustrating how this light beam can be used in communic Mr. Smillie sent music from a record player through a telephone alo light beam. He pointed out that an ordinary light wave would carry channels or messages at the speed of light, while one laser bean carry 900 million voice channels and 14 million TV channels. Me could be carried at the rate of one half million words a minute. Mr. said that in the Bell laboratories he had seen three dimensional TV no screen was needed but where the image was created in the air of the viewer who could, if he wanted, walk around it or pass thro

**Oakville,** a rapidly expanding industrial community, has more than electric single-family dwellings and another 80 under construc planned for this year. In addition, some 330 all-electric apartmen are occupied or nearing completion.

In the face of this building boom, Oakville PUC found it neces one occasion to locate a substation in the middle of an apartme complex. The existing station couldn't be expanded to take the conc load of the new apartment buildings and the electrically-heate block. To avoid an architectural clash, the utility decided to bury the underground, in land provided by the developers who also shar construction costs. The vault, 22 feet by 45 feet by 19 feet deep, i proof, fireproof and accessible from one of the apartment's parking Power enters the vault through ductwork from a terminal pole a blo and 4 kv circuits leave in parallel cables. Invisible to the public, th the vault is covered with paved patio stone to blend with the deve

**Dr. Arnold Anderson,** 68, Strathroy PUC, died shortly after att commission meeting at which he appeared to be in good health. M son, a former mayor of Strathroy, had 23 years service on the PUC also a charter member of the local parks board.

## April energy production

Primary energy provided by Ontario Hydro in April totalled billion kilowatt-hours, an increase of 10.6 per cent over the month a year ago.

For the first four months of 1966, the total is 16.24 billion watt-hours, up 10.1 per cent over the same period last yea justed for seasonal influences, primary energy demand in Apr 3.88 billion kilowatt-hours, .6 per cent less than the pre month.

The seasonally adjusted total for April represents 46.62 kilowatt-hours at annual rates. This is 335.1 per cent of the e demand in 1949.

# off the wires

Anyone who has enjoyed the very considerable rivilege of jolting along for a few miles in that little d caboose behind the train will look upon the CN's test plans with mixed emotions. The caboose is oing modern and while freight train crews of the ture will have it pretty soft — old-timers won't be e least bit envious.

Electric lights will replace the smoky coal oil lamp it the last wick will only be extinguished by snuff- g out another chapter in the romance of railroad- g. And those cantankerous old cook stoves will ve way to electric grills and oil burners — a ange veteran tail-enders allow will add little to e flavor of bacon and eggs sprinkled lightly with al dust.

Refrigeration and radio telephones are other elec- cal innovations scheduled to pamper the boys o bring up the rear. Oh yes, and there are those cinerating toilets — operated by axle-driven nerators like the rest of the electrical equipment. is, we suspect, is one change likely to be em- aced by one and all with enthusiasm. Up until now boose design solved this vital human considera- n by ignoring it — a practice thought to account r the pained expressions to be seen on many train- en after a long day's run.

What else is in store for the train followers? ller bearings, shock-absorbing underframes and w trucks will combine to provide the boys with a smoother ride. Chairs will be fully upholstered and ey will sport reclining adjustments. Large clothes kers will be provided and the floors, needless to , will be tastefully covered.

So much for progress but we still say an electric ll makes a hell of a spittoon. As the magazine eeping Track" sagaciously points out "it's the ng end".

Following hard on the heels of legislation pro- sed by Etobicoke Township, which would ban thing in bathtubs wherein the water fell below 0 degrees fahrenheit, comes the disclosure that s against the law to go to the bathroom in North rk under any circumstances. At least, that is the plication of testimony presented by a radiation pert at a recent works committee meeting.

Criticizing a bylaw which bans the dumping of ioactive waste materials in the township's vage system, physicist Dr. Arthur Schmidt pointed that the human body contains radioactive terial, including potassium, so that every time goes to the bathroom, radioactive waste is dis- rged into the sewage system. The good doctor suggesting that a new law be framed permit- discharge of radioactive waste into the sewage tem, but only if it met standards set down by federal government.

Nevertheless — as things stand now — the citi- s of North York may be flaunting the law every they flush the toilet. Since outhouses are also rned on by township legislation and septic tanks l to be a little high, especially when they break n, it looks like North Yorkers will have to borrow ge from the old-time caboose riders — grin and bear it. Rather a grim prospect — thousands of commuters with pained expressions pouring into Toronto each morning to join a throng not noted for joviality of countenance under the best of conditions and certainly not before the first coffee break.

■ One of the more interesting publications dealing with things electrical to cross our desk in some time is a newsletter published by the scientific introduction centre — a computerized mate selection service. And we're happy to learn that many of its clients see eye-to-eye with the data processing system since marriages are being arranged at a great rate. As the newsletter says of its service, "this is the most romantic scientific study of people that can be imagined".

We'll go along with that, and with most of the advice tendered in a checklist of dating do's and don'ts included on the back cover. But one item has us puzzled. "On first dates," advises the checklist, "don't romp from theatre to ballet to musical concert . . . You can't find out much about your new friend while you're both sitting in the dark watching a movie."

Ah well . . . things must have changed more than we realized in the last decade or two.

■ Love and electricity also go together in some of the work being carried out by psychologists at an American university. They are using the stuff to promote a feeling of love among schizophrenic children. These kids, like those of our neighbors, are completely antisocial and spurn adult attention. By electrifying the floor of the treatment centre, except for an island where the therapists were gathered, the children were induced to seek haven in adult arms from the mild but unpleasant shocks, thus establishing a relationship.

A newspaper account of the experiment reports that two of the four children in the original test are now in school. One cannot help wondering what became of the other two. Another conjecture is the market potential of these electric floors. Conceivably they could be promoted through "Playboy" for use in bachelor apartments.

■ Electrical contributions to the science of medicine continue to grow and some of the latest developments are fascinating in the extreme. Take the case of the 65 Georgia Power Company employees who are participating in a test designed to speed detection of heart ailments.

Fitted with special vests, the employees can transmit electrocardiograms to the doctor's office by two-way radio or telephone so that, in the event of trouble, the physician can decide the importance of the symptoms and direct whether or not the patient should go on his way, be taken to hospital, or remain where he is. A computer and digital analog converter can be programmed to automatically interpret the electrocardiogram and within seconds the answer can be sent to the patient.

Fantastic as it all seems, present developments along these lines only serve as a springboard for the imagination. It isn't too hard to envision the day when everyone will be hooked up to a computer and heart tracings monitored continuously at a central station. A warning buzzer would warn the individual to drop everything and head for the hospital.

Fancy dropping out of a ticklish poker situation on the grounds that the old ticker needs servicing. And then telling the boys you're sick in bed with a digital analog converter. Tender loving care, computer style, will take a bit of selling.

■ For this month's poetic note we are indebted to an unknown author, but it isn't Shakespeare:

Who is the stranger, mother dear?
Look, he knows us. Ain't that queer?
Hush. My own, don't act so dumb,
He's your father, dearest son.
He's my father! Not at all.
Father died away last fall.
Father didn't die, you bub,
Father joined the curling club.
But they've closed the club, so he
Has no place to go, you see.
No place left for him to roam,
That is why he's coming home.
Kiss him, he won't bite you child,
All those curling guys look wild!

Dandy, but perhaps we could add a couplet of our own. How about:

Catch him while you can, my pup,
Eighteen holes are coming up!

■ Harking back to a very old type of energy, a columnist in a Toronto newspaper points out the anomaly of the gas light being brought back to popularity by electricity. "Having relegated the gas-lamp to obscurity as a fire hazard, a dirt-maker and an eye-weakener," he observes, "lightbulb manufacturers have now succeeded in creating a bulb that looks just like a flickering mantle."

We personally noticed the lamps on display in a local department store and were told they were selling fairly well as Victoriana becomes popular. They certainly look authentic and could find some application in a modern all-electric home — wired for gas.

■ A press release from the North of Scotland Hydro-Electric Board informs us that a Mrs. J. H. Woolley from Rowallan, Bullwood, Dunoon, is the winner of the "Oldest Washing Machine" competition recently sponsored by the Board's Caledonia Area, which embraces Perthshire, Argyll, Bute, Kinross and part of Dunbartonshire. Mrs. Woolley's ancient washing machine, a Snowbird made by the Gilson Manufacturing Company of Guelph, Ontario, has been in continuous use for 42 years, according to the release.

And if you don't think the release has a Scottish ring to it, consider the author's name. It is signed by assistant information officer Hamish Mackinven.

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# she aged 60 years for hydro

When all those people marched on Queen's Park in 1906 to demand public power—Sharon was around.

And she remembers riding down to the station on an electric street car to welcome her soldier boy home from the First World War.

Sharon had a ball during the swinging twenties and while things were a little rough in the hungry thirties, she had no trouble getting war work in the decade that followed.

Those big hydro-electric plants pushed through to meet spiraling post-war electrical demand stick out in her mind feature of the fifties and she expects tricity will keep things sizzling thr the sixties. But she's really sold or future and expects to witness some p interesting electrical developm between now and the year 2000.

Running out of time, you say? Not r Sharon breezed through 60 years of trical progress in a matter of days ended up as young looking as ever. see her in the next issue of Hydro N where she helps capture the atmos for our 60th Anniversary review.

1906/1966 sixty years of hydro progre

Ontario Hydro Electric Power

**ly-august/1966** Sixty years is less than the average lifespan yet it encompasses all of Ontario Hydro's history. During that period, the Commission has developed from a piece of legislation to one of the world's great electrical utilities. Yet it must duplicate all of this growth within a single decade. On the occasion of our 60th Anniversary, we invite you to review the past, consider the present and contemplate the future through the pages of our Diamond Jubilee issue.

GD

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ontario hydro news
july-august/66

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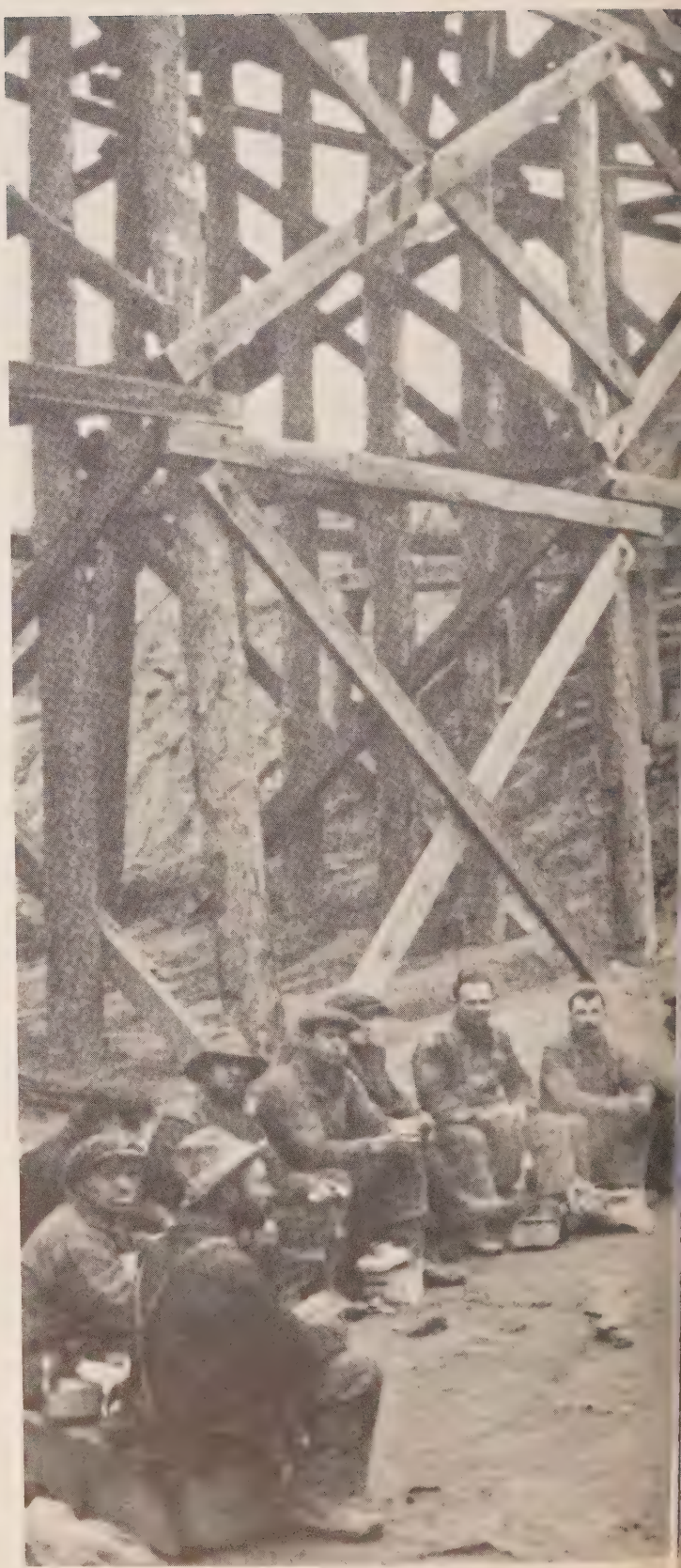
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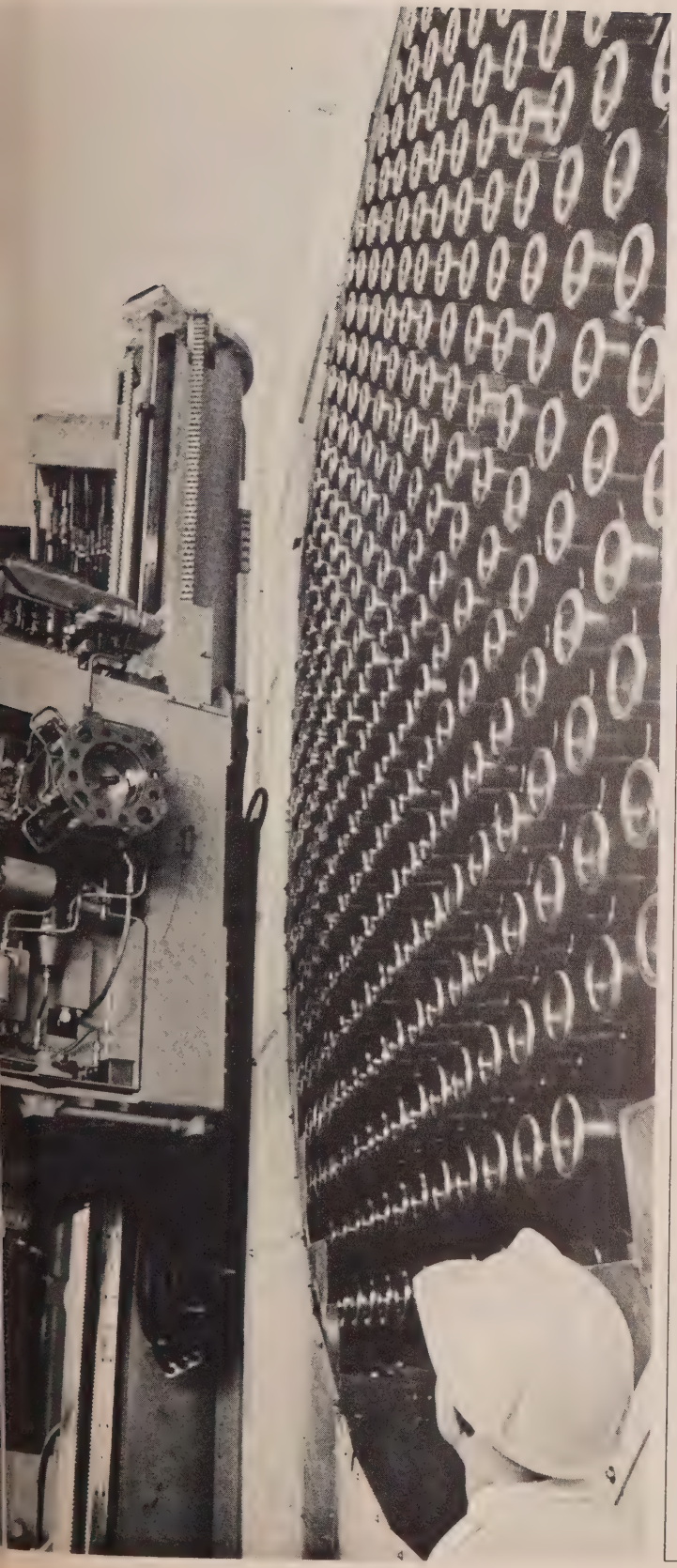
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**a word of thanks**

Hydro News would like to thank the following individuals and organizations for the equipment and facilities they made available to help set the stage for our 60th Anniversary color photographs: Eaton's Archives Department; Ontario Hydro Museum; Crippled Civilians; Kiwanis Club of West Toronto; L. T. Powell, general manager, Canadian National Exhibition; Metropolitan Toronto Police Department; Botteas Flower Shop; Freedman Harness Maker and Saddlery; Toronto Transit Commission; International Business Machines and Meadowvale Par Three Golf Course.





# sixty years of hydro progress

Since the time when our ancestors first looked out from their caves and saw forked tongues of fire stabbing across the dark skies to the ominous accompaniment of thunder, man has been awed and intrigued by the phenomenon of electricity. And his experiments in this field go back more than a thousand years.

In relation to time, Ontario Hydro's history is insignificant, but in terms of accomplishment, the 60 years of the Commission's existence encompass most of man's electrical progress.

When legislation was passed establishing the public power system in Ontario, in 1906, horses outnumbered autos by a wide margin, irons, toasters and coffee-makers were the only appliances available and the use of electricity was confined almost exclusively to lighting and a few industrial applications.

Today, electricity pulses through the warp and woof of our economic and social fabric to the extent that life without it is difficult to conceive. Highlights of this fantastic metamorphosis in Ontario are set out in the following pages, interwoven with the great historic and social developments of the day. Model Sharon Acker also helps orient us in time – pictorially.

Nor have we neglected the "before" and "after" in our 60th anniversary issue. Relating the story of electricity from our cave-dwelling predecessors to the formation of Hydro was the task assigned to Bob Morrow. We put three pages at his disposal, and watched him flinch. But he took up the gauntlet and if the centuries fly by with the speed of light, his description of the events setting the stage for Hydro makes good reading. We called the story From B.C. to A.C. and it commences on page 16.

Equally challenging was the soothsayer's chore allotted staff writer Les Dobson. "Tell us what to expect in the year 2000," we asked, "and anything else that comes through on your crystal ball". His prognostications commence on page 19.

And to round out our anniversary review and forecast, we interviewed Dr. J. E. Wilson, president of the Ontario Municipal Electric Association. We hoped his knowledge and experience would help our readers to view the unique Hydro family in its proper perspective. His answers are to be found on page 24.

*These photos span more than 45 years. Fueling machine at Douglas Point contrasts with time-out on the Queenston-Chippawa development.*



# kilowatts and ten dollar suits

Canada steps cautiously into the twentieth century — an era of bobby-helmeted policemen, straw boaters and brass-knobbed bedsteads. Making its debut as a force to be reckoned with is a mysterious and invisible energy called electricity — a revolutionary source of power which a handful of dedicated men are harnessing to bring light to a shadowy world of kerosene, gaslight and candles.

You can pick up a suit for $10, a good stiff hat for a dollar. The addition of Alberta and Saskatchewan has brought the number of provinces to nine, although Canada remains a necklace of isolated communities strung along the railway lines.

Her vast mineral wealth is largely untouched. Iron and steel are infant industries. Nickel, soon to become invaluable, plagues production in Sudbury's copper mines.

Most significant in this period of transition is the tremendous flood of immigrants surging across the prairies in response to the Laurier government's all-out campaign of inducement. Americans, Irish, English, Scots, settlers from Hungary, Germany, Italy, Ukrainian peasants from Galicia still wearing their coats of sheepskin — thousands upon thousands of them answer the call phrased in a multitude of languages. This human tide flowing westward nudges wheat production to new heights.

It's an era of exploration and invention. Roald Amundsen sails the Northwest Passage and Canadians make their first precarious hops in airplanes. Trans-Atlantic radio sputters above the static into everyday use and Ottawa gets its own branch of the Royal Mint.

For some it's the end of an era. Victoria is dead. So is Edward VII after a short reign. The days of the horse and buggy are numbered.

In 1906, a 1,500-strong delegation marches on Queen's Park to urge the appointment of a commission to supply low-cost electric power to Ontario municipalities. Within a few months the necessary legislation is enacted and Ontario Hydro is born.

By the end of the decade, this fledgling public power enterprise has a 110,000-volt line, one of the first anywhere, linking Dundas with small power stations at Niagara Falls, 51 miles to the east. Power is officially turned on in October, 1910, at Berlin (now Kitchener), the first of 14 contracting municipalities. Before Hydro, electrical users in Kitchener pay 12 cents per kilowatt-hour. First residential Hydro rates average about six cents — a downward trend which continues over the decades.

But the advocates of electricity are not without their critics. A London newspaper asks whether Adam Beck has not become a mono-maniac on the power question. "In a flight of imagination he declared that every cottage, every house, every home in this city will be lighted by electricity" the writer sarcastically asserts. Time will tell.









*Civic celebrations marked the advent of Hydro power in Kitchener on October 11, 1910. Headed by a military band, dignitaries were conveyed from the railway station to the site of the ceremonies.*

*Construction workers lived dangerously in 1903 if photo of cribwork during construction of Toronto Power plant is any criterion. Men posing nonchalantly over Niagara River worked for private company which built the station.*

*Ice jams have always intrigued and crowd shown above the American Falls early in the decade suggests that curiosity and safety have little in common.*

*Methods have changed since this power line was built in 1907. Toronto Niagara Power Company crew is shown building 12,000-volt line at Wabash, near Thamesville.*


KING STREET

# it's a long way to tipperary

War clouds gather over Europe, but who's aware of them? Immigrants continue to pour in, Canada's population tops seven million and Hydro expands to provide a growing share of the rising demand for power.

There's an oil boom out west — some make fortunes overnight, others lose them just as quickly. Laurier is swept away on a powerful tide of Canadian nationalism in the 1911 elections and the Conservatives win the day.

Although the first clumsy electrical appliances — refrigerators, ranges, vacuum cleaners, mixers, clocks and even dish washers — are spattering the market, the drastic social and economic changes of electrical living have yet to be felt. Few homes have the luxury of a bath or even running water. Disease is rife and workers put in long hours in the factories where muscle power still predominates. Electricity has ousted horses from the street railways but that rich man's plaything, the automobile, is restricted to a jolting 15 miles an hour.

War breaks out in the humidity of summer when schools are closed and people, those who can afford them, are at their cottages. The idyllic scene is rudely shattered as the German armies begin to roll across the fertile plains of France.

Canada responds to the call. Volunteers from all walks of life converge on the gigantic camp established at Valcartier, near Quebec City, and before long 30,000 troops are heading for the battlefield and the alternate boredom and horror of the trenches. A quarter of that first contingent will never return. At home, churches turn their services into recruiting rallies, women hand white feathers to the few who refuse to volunteer and soon the ranks swell to half a million men.

There are heroes: Billy Bishop downs 72 enemy aircraft and tops his collection of decorations with the VC. There are riots: conscription brings English-French relations to the boil and there is almost civil war. The war in Europe grinds to a halt. Ten million men have died and Canada, and the world, will never be the same.

Hydro meets the needs of people at peace, people at war. The Ontario Municipal Electric Association is formed in 1912 and one of its first tasks is to align the municipalities behind the most ambitious hydro-electric project of its day — the building of the Sir Adam Beck-Niagara Generating Station No. 1. Comprised of the elected and appointed municipal utility commissioners, the OMEA is destined to become a strong unifying force among the publicly owned utilities of the province and to guide and help formulate Hydro policy at the municipal level.

But first things first. In 1914, Adam Beck opens the now defunct Wasdell Falls power station on the Severn River — the first plant designed and built by Hydro. "We are off now," he tells an enthusiastic audience. "We are going to build power developments and provide electrical service that will astonish the opponents of the Commission."

Six years after the formation of the OMEA, the Association of Municipal Electrical Utilities is born. The AMEU consists of management and senior operating staffs of the municipal systems — an association to become renowned throughout the province and abroad for its technical and administrative contributions to utility operations. Its creation marks the beginning of a virile three-way partnership. Hydro is on the move.










*Hydro has been extolling virtues of electrical living at special events almost from the start. Photo shows Western Fair, London, in 1912.*
*Paydays have lost little lustre over the years although procedures have been refined. Photo shows pay line-ups during construction of Ontario Power plant.*
*High flying "squirrel gang", pictured on pole crossarm, belongs to Waterloo Public Utilities Commission. The year was 1912.*
*Auto party seems to have missed the turn and ended up in tunnel of the Ontario Power station, at Niagara. Photo was taken in July, 1910.*



# electricity and all that jazz

Reaction to the war and to newly-found freedoms highlights this era. Women have won the right to vote and there is reaction to an age of electricity — to mechanization, movies and radio. Reaction characterizes the rampaging, preposterous, pole-sitting days of the Roaring Twenties.

Electric power really comes into its own. A cheap and plentiful supply sparks a multitude of new industries from chemicals to the automobile. The rising income of Canadians allows them to indulge in the hitherto luxuries of electric ranges, refrigerators, vacuum cleaners and washers. The demand is fantastic. Industry is churning out appliances by the million.

It's the age of beauty contests, marathon dances, flappers and jazz. It's the age of Rudolph Valentino, crystal sets, Mary Pickford (a Toronto girl) and goldfish swallowers.

The Charleston's in, so's the Black Bottom ."Tea for Two" hits the top of cat's whisker pops. Canada's ethnic scars heal as the country steers towards prosperity. North America, brought closer to Europe after Alcock and Brown's epic transatlantic flight, goes wild when Lindbergh does it solo.

Turbines at Sir Adam Beck No. 1 begin turning in 1921, the year in which the use of power in rural areas is encouraged by a 50 per cent grant-in-aid towards the cost of primary lines. This grant is later extended to all lines, both primary and secondary.

A note of sadness dampens the Hydro spirit, in 1925 with the death of Sir Adam Beck, its first chairman and a leading proponent of power at cost from the outset. But willing hands catch the torch and carry it higher and higher. Completion of the 230,000-volt line from Gatineau to Leaside, in 1928, keeps the Commission in the public eye as a leader in technological progress.

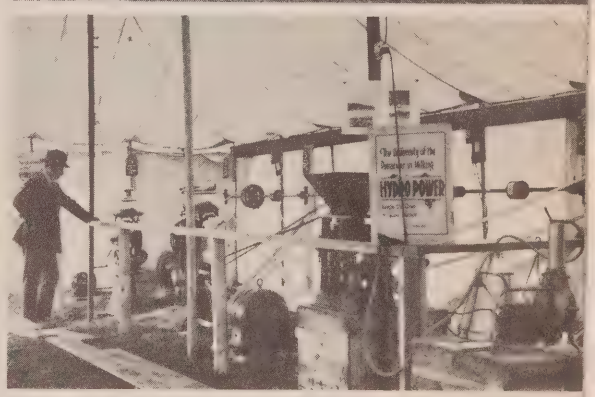
And the U.S. is in the ineffective grip of prohibition. Started as an emergency wartime measure, the liquor laws lead to lawlessness. Al Capone heads the Chicago underworld, newspapers daily carry stories about raids on the innumerable speakeasies where hooch is sold illegally.

Most Canadian provinces join the prohibition bandwagon although brewers and distillers continue to manufacture the products for sale elsewhere — a situation leading to wholesale smuggling into the United States and to border incidents, bribery and corruption.

Hardly surprising in this crazy, mixed-up, free-wheeling decade that the stock market should rocket to an unprecedented peak on the analysts' charts. But one black Tuesday in October, 1929, the financial bubble bursts — ushering in a decade of misery and poverty still fresh in many minds.










*By Christmas, 1928, the Lac Seul Dam at Ear Falls on the English River had reached this stage — quite a feat considering that all equipment and supplies had to be moved 100 miles by water from Hudson, near Sioux Lookout.*

*Farm electrification had a long way to go in 1930. Photo shows "12 horsepower" sweep at work threshing on an Ontario farm.*

*"Five cents chops 83 pounds of grain", and "Hydro power keeps the cows in good humor" were among the posters displayed in the barn and dairy section of a plowing match at Niagara Falls, in 1926.*

*Ambulance and other vehicles are drawn up before hospital during construction of Queenston-Chippawa development. Project was officially opened in 1921.*


The Globe
ODDWELL STATEMENTS

# the hungry thirties

Lean and bitter years, a degrading hand-to-mouth existence for at least a million Canadians — these are the ugly memories of the Hungry Thirties.

Industry and agriculture lose impetus as depression settles over the land. Huge steel mills fall idle and wheat prices plummet. Nature adds to the agony. Drought hits the prairies and dry winds scoop up the dusty topsoil leaving behind a wilderness and blackening skies 2,000 miles to the east.

Defaulting mortgage commitments, families lose their homes and are reduced to seeking out an existence in shacks. They lose their refrigerators, their stoves, their furniture. Unable to afford gasoline, they hitch horses to their automobiles. Society is reverting to the barter system — doctors do without pay and teachers take payment in kind.

The sad state of affairs is mirrored by electrical demands in Ontario. Climbing without pause since the outset of Hydro power more than 20 years earlier, the electrical demand graphs actually reverse direction in 1931 for the first time (and it hasn't happened since).

Ontario Hydro's peak demand falls from 866,000 kilowatts in 1930 to 808,000 kilowatts in 1931 and the 1930 figure isn't surpassed until 1934. Average use per municipal domestic customer bears out the discouraging peak load figures. It grows by a parsimonious four kilowatt-hours in four years (1930-33). Sales promotion is the order of the day to bolster sagging growth.

It's a time for charity and the relief offices dole out dreary diets to the half-starved. It's a time for patched clothing and shoes with cardboard soles.

Vagrants steal rides on freight cars, wandering from place to place in search of employment. Large cities become depositories for the hopeless and night fires twinkle beside the railyard bivouacs. Relief camps are established to provide board, lodging and a semblance of work to the illiterate and college graduate alike.

In Alberta, poverty-stricken farmers adopt the Social Credit doctrines and in Ontario, Mrs. Oliva Dionne gives birth to quintuplets. Hydro opens the first six floors of its present Head Office in Toronto, later adding 12. The partly completed Abitibi Canyon station is acquired by Hydro while, elsewhere in the north, men of vision build for the future. The Ear Falls plant on the remote English River goes into service as do Chats Falls and Rat Rapids.

Mussolini invades Ethiopia and the C.B.C. comes into being. Edward VIII abdicates and Mackenzie King, in Europe for the 1937 coronation of George VI, remains optimistic about the prospects for peace.

But Austria is the first to fall, then Czechoslovakia and Poland. After 10 years of highjinks, and as many in the doldrums, Canada is again at war.

Hydro has weathered the storm. After a period of exceptional inactivity, new peaks of electrical consumption are stabbing upwards on the operating charts. At the outbreak of hostilities in 1939, resources total 1,558,000 kilowatts.









*Keeping lines clear of trees had become a big job by 1937 for Ontario Hydro's seven-year-old forestry department. Six-man cab trucks with enough room in back to carry all gear were introduced that year.*

*For a number of years after his death, August 15, 1925, memorial services were held for Sir Adam Beck in the Hamilton cemetery where he was buried next to his wife. Group shown in graveside tribute was photographed in 1933.*

*Roughing it didn't bother the 1937 advance party on the Long Lac river diversion — part of a project which changed flow of water from Hudson Bay to Lake Superior, providing additional power from the Niagara and St. Lawrence stations.*

*Farmers in the thirties were beginning to appreciate electricity's value as a hired hand. Abe Gingerich of Baden uses a 5 h.p. motor to fill his silo.*



# war and peace

Crisis injects new life into a recovering economy enabling Canada to wield an effective fighting machine. Hydro also goes to war, keeping the vital wheels of industry turning at an unprecedented rate.

More than a million Canadians, including 49,000 women, don uniform. Canadian troops are embroiled in bitter fighting in Sicily, Italy and the ravaged battlefields to the north. Forty-eight squadrons of the RCAF fight and many die in the skies above Europe while, day in, day out, ships of the Royal Canadian Navy keep open the essential North Atlantic supply routes.

It's a fantastic effort for a country of less than 12 million.

Conscription comes but there's less strain on Anglo-French relations than in 1914-18. Canada calls for the kilowatts to produce 800,000 vehicles, 16,000 aircraft, 6,500 tanks and self-propelled guns and nearly 1,000 cargo and escort vessels.

Kilowatts, like other vital commodities of war, are directed into the most productive channels. Mandatory restrictions and appeals for voluntary curtailment in the use of power for non-essential purposes ensure an uninterrupted supply of electricity to all war industries in Ontario.

More than 131,000 airmen are trained at 97 flying schools in Canada under the British Commonwealth Air Training Plan. Amid all the furor, Henry Larsen sails the RCMP vessel St. Roch east through the Northwest Passage and back again. The Alaska Highway opens.

Peace comes to Europe as Hydro moves to meet an unexpected surge of post-war expansion. Extensive administrative reorganization includes the amalgamation of rural services and the introduction of a more uniform rate structure. And the Commission takes over the Northern Ontario Power Company network, which includes eight hydro-electric stations and a dozen municipal distribution systems.

But the battle continues to rage in the Far East until one day in August, 1945, when a gigantic fireball engulfs the Japanese city of Hiroshima in the heat of seven suns. Seventy thousand souls are incinerated and thousands more injured. Whether we like it or not, the Atomic Age is here.

Technology, accelerated by the hostilities, is put to peaceful purposes. Ontario viewers lap up television spill-over from south of the border and the new media becomes an unexpected load builder.

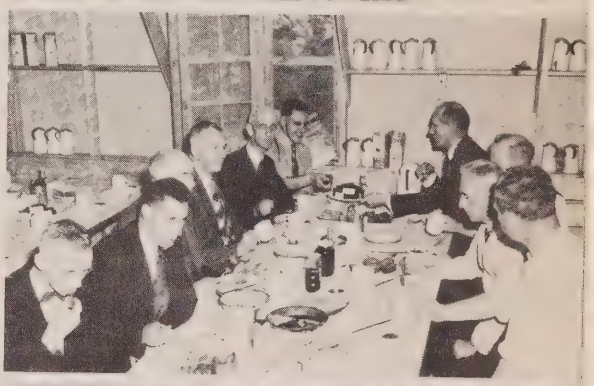
But Hydro's biggest challenge is to meet spiralling demands for electricity stimulated by industry as it attempts to satisfy pent-up demand for consumer goods. Only days after war's end, Hydro starts an addition to the DeCew Falls plant and new ones — Stewartville, Aguasabon, Des Joachims, Rayner, Pine Portage, Chenaux, Otto Holden — follow in rapid-fire succession.

For administrative purposes, Hydro divides its vast service area into nine regions and work begins in 1949 on the Commission's first steam plants.

The same year sees the launching of a $352 million frequency standardization program, in which seven million pieces of electrical hardware are changed from 25-cycle to 60-cycle operation.

Emphasizing Hydro's post-war progress is the chop-chop of the Commission's first helicopters as they whir overhead on line patrol.









*Hydro security was tightened during World War II as photo of old DeCew plant suggests. Militia men or Provincial Police officers stood guard.*

*Keeping abreast of Hydro developments, a group of OMEA representatives takes time out for lunch in construction camp at Barrett Chute on the Madawaska. The year was 1942.*

*"Feed yourself" was a World War II slogan and victory gardens sprang up in back yards and vacant lots. Hydro employees heeded the call.*

*By 1944, there were 298 municipal utilities in the Hydro family. Fantastic growth was just around the corner for Etobicoke Hydro and many others.*



# a rip-roaring decade

The fabulous fifties — a time of breakneck technological expansion and a boom in building. New applications for electric power pour in from all sides.

Canada's first television station transmits in Montreal and the country's first subway whisks north-south commuters beneath Toronto streets. Hail the transistor — brainchild of a trio of Americans and a fundamental piece of hardware for the computers of the so-called Intellectronic Age.

Stalin dies and the crowds line Red Square. Hurricane Hazel cuts a devastating swath across Southern Ontario killing 83 people and causing damage estimated at $25 million. "If we have it, take it," says Hydro Chairman Robert Saunders as he places the Commission's resources at the disposal of rescue forces.

Enclosed in their top-security cocoons, physicists in the arms race bridge the frightening thermo-nuclear gap between fission and fusion, kilotons and megatons, while Hydro engineers join forces with Atomic Energy of Canada to harness the atom for power purposes.

On the war fronts of the world, North Korea crosses the 38th parallel to provoke three years of bitter fighting; Israel, France and Britain land troops in Egypt and Khrushchev threatens London and Paris with missiles. Canadian servicemen join the UN forces in Korea and help to keep the peace at Suez. There's a brief but ill-fated revolt in Hungary.

Canada and the United States agree to a new Niagara River diversion treaty, paving the way for the $312 million Sir Adam Beck-Niagara Generating Station No. 2, the associated pumping-generating station and costly remedial works to preserve the beauty of the falls.

They get up steam early in the decade at the Richard L. Hearn power station in Toronto and the J. Clark Keith in Windsor, first and second largest coal-burning plants in the country. Vincent Massey is the first Canadian to be appointed Governor-General.

Among the momentous decisions of the fifties is the launching of the St. Lawrence Power Project — a step advocated by Ontario Hydro for more than 30 years. The U.S. agrees to participate and the green light is flashed in 1954. Before the decade ends, the Queen presides at joint opening ceremonies for the seaway and unveils a boundary marker at the power development.

Oil and gas pipelines begin to radiate from the fossil fuel reservoirs of Alberta and, faced with sharp competition from natural gas, Ontario Hydro revises its entire sales outlook. Electric heating for homes, schools, offices, churches and factories is actively promoted throughout the province. Load building is in full swing to help maintain low rates through the full use of facilities.

It's a streamlined, aggressive and computerized Hydro which sees the close of this rip-roaring decade. The economy is booming, power demands are sky-rocketting and Canadians have never had it so good.










*Houses on the move became a familiar sight during construction of the St. Lawrence Power Project, 1954-59. Seven communities and part of an eighth were moved to new locations during this $600 million development.*

*An event of significance during the decade was the 50th annual convention of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities, in 1957. The two associations have been closely tied with Hydro progress over the years.*

*Her Royal Highness, the Duchess of Kent, officially opened the giant Sir Adam Beck-Niagara No. 1 plant, August 30, 1954. Beside her is Robert H. Saunders, Hydro chairman at the time.*

*The busy fifties also saw Hydro and its contractor, Canadian Comstock Limited, complete a mammoth frequency standardization program in Ontario during which 7 million pieces of equipment were changed from 25 to 60-cycle operation.*



# the sizzling sixties

Electric power is the cornerstone of the exciting new world of the sixties. Man stands on the threshold of space and first honors go to a cheerful-looking Russian — Major Yuri Gagarin. A whole new vocabulary is born. Words such as boosters and retro-rockets, count-down and A-OK trip from the lips of the youngest schoolboys.

Communications improve daily. Television pictures are transmitted between America and Europe via a transistorized metal satellite called Telstar, hurtling around the earth. North Americans are gazing at 59 million TV sets; Europeans at 26 million. Making its debut is an intense and coherent beam of light called a laser with staggering implications in a multitude of fields. Computers are intruding everywhere.

America and Russia stand on the brink of nuclear disaster during a squabble about missiles in the Caribbean. Facing the prospect of Armageddon they retreat, leaving the White House and Kremlin linked by hot line.

Canada is to the fore in a peace-keeping role in trouble spots around the world. Vietnam sinks deeper into a quagmire of suspicion, hatred and intrigue. At home, there's a new flag.

Standards of living keep on rising and the business boom refuses to flatten out. Canadians have more than 100 kinds of electrical appliances at their fingertips compared with 10 half a century ago. Demands for power are prodigious, doubling every 10 to 12 years.

To meet the challenge, Hydro looks to the north — to new hydro-electric stations in the James Bay watershed. Power from this $200 million complex is about to flow south at 500,000 volts — a pioneering effort in extra-high-voltage transmission.

And it looks to the atom. Canada's first nuclear electric plant hums to life at Rolphton, Ontario; Douglas Point nears completion at 200,000 kilowatts and construction starts on a million-kilowatt-plus nuclear plant east of Toronto.

Coal-burning plants keep pace. Lakeview is moving to become the country's largest and a $218 million development is taking shape at Courtright, in the Sarnia area.

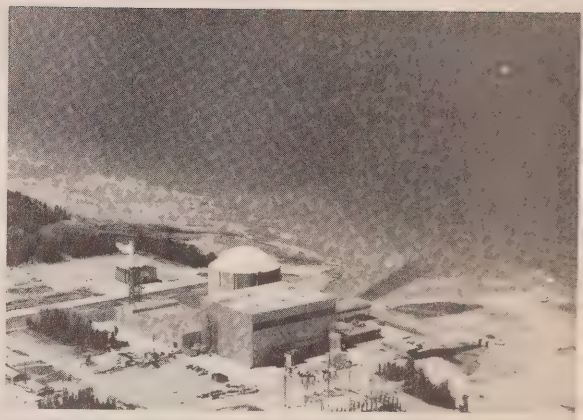
Hydro has travelled far in less than a lifetime. It is a member of an inter-connected system of utilities stretching from Northern Ontario to the Gulf of Mexico and from the Rocky Mountains to the Atlantic Ocean.

From the 14 original municipalities, Hydro has grown to supply 358 municipal utilities in cities, towns and villages across Ontario. Altogether, it serves 2,142,000 customers, directly and through the associated utilities.

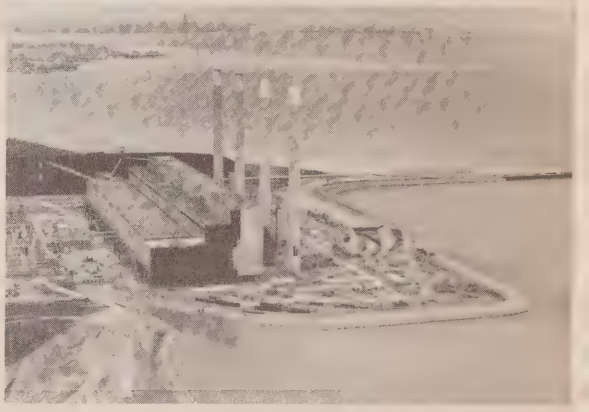
Per customer consumption figures suggest the role electricity has come to play in the lives of the people. Monthly average consumption by customers served by the Hydro municipalities tops 532 kilowatt-hours — up from 20 kilowatt-hours in 1914. And rates are among the lowest in the world.

It's been 60 years of outstanding progress. But with today's rocketting demands, all this growth must be duplicated in a single decade.

It's full steam ahead for the seventies.







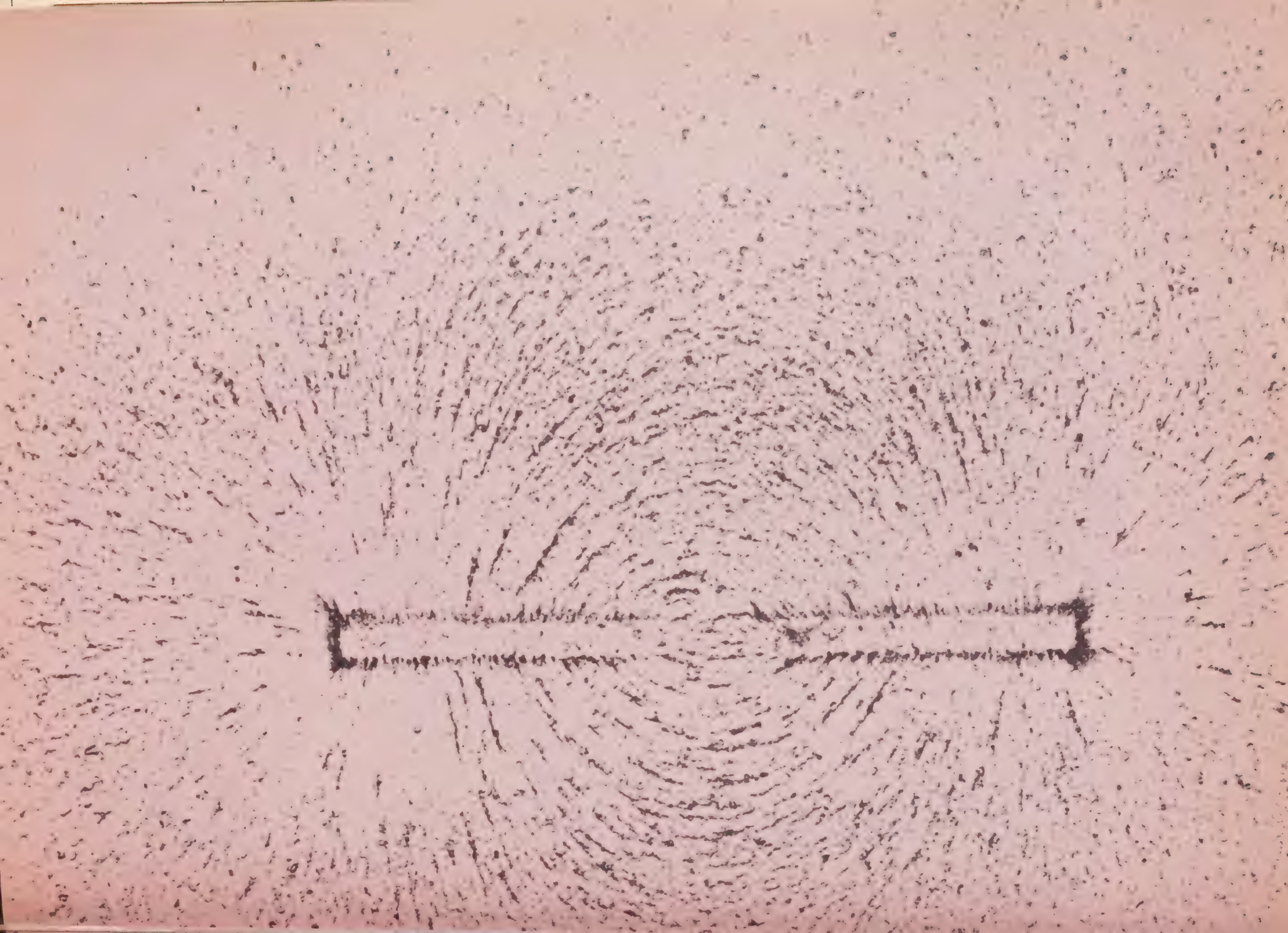


*Jutting out into Lake Huron, the Douglas Point nuclear power station near Kincardine, Ontario, is Canada's first full-scale nuclear power plant.*

*Keeping up with developments in the utility equipment field is important and the demonstrations and exhibits sponsored every second year by the AMEU have attracted wide attention.*

*The sixties also saw increasing emphasis placed on coal-burning plants such as the huge Lakeview station in Metropolitan Toronto. It will have a capacity of 2,400,000 kilowatts.*

*Finishing touches are being applied to Kipling G.S., last of three new hydro-electric plants on the Mattagami River. Total capacity of this northeastern complex is 376,200 kilowatts.*



# from B.C. to A.C.—a tortuous path

by Bob Morrow

Crackling from the skies for everyone to see since the beginning of time, electricity has awed and intrigued man down through the centuries. He's still learning how to use it.

Centuries of painful hit-and-miss research punctuated by occasional flashes of genius mark electricity's tortuous path through a history laced with names from several civilizations.

Thales of Miletus, a philosophizing and inventive Greek, was probably the first to find that rubbed amber — he called it electron — attracted feathers, straw and small pieces of wood. Another investigator, Titus Lucretius Carus, knew about magnets and iron filings 1,500 years before Columbus hoisted sail.

Men such as Otto von Guericke, Hippolyte Pixii, Alessandra Volta and Jean Marie Ampere added their own particular contributions to our electrical heritage. So did Roger Bacon, Benjamin Franklin, Zenobe Gramme and Michael Faraday, to mention but a few.

Credit for the first battery goes, in 1800, to Volta, professor of physics at the University of Pavia, Italy. Ampere used the resulting current to experiment with energized coils while another Frenchman, Jean Arago, placed steel bars in the coils to make magnets. This set the stage for Michael Faraday, who in England unearthed the peculiarities of electromagnetic induction — principles upon which the generator and transformer are based.

It wasn't long before the first dynamos appeared.

Battery-powered telegraphy was all the mid-century rage, with Toronto, Hamilton, Niagara Falls and St. Catharines among the first to realize the potential of long-distance communication. Progress was swift and by 1858 Queen Victoria was able to send a triumphant 90-word message to U.S. President Buchanan over a cable laid from Ireland to Newfoundland.

No real application for the dynamo had appeared at this stage but, across the Atlantic, English and French inventors had long been toying with the curious, sputtering phenomenon of the electric arc. Ideas spread and soon a flush of street lighting systems, package deals complete with dynamos, arc lamps and distribution networks, cast their garish glow over the New World.

Prominent among the U.S. developers were Edward Weston, Charles Brush, Elihu Thomson and Edwin Houston while, in British Columbia, Robert McMicking introduced carbon arc lamps to the streets of Victoria, in 1876. The experiment almost failed, but McMicking survived to form the Victoria Electric Illuminating Co., forerunner of B.C. Electric. Toronto's first street lamp was a globe suspended from a telegraph pole at the corner of King and Yonge streets with pulley lines to draw it up and down.

Something new now from the indefatigable Thomas Alva Edison, one-time telegraph operator at Stratford, Ontario. Edison patented, in 1879, what is widely acclaimed as the world's first practical incandescent lamp. The saving word may be "practical" because several pioneers, including Toronto medical student Henry Woodward, beat him to it.

While Edison was busy sticking "red hot hairpins in glass bottles," as one wag described it, John Joseph Wright and Thomas Ahearn were neck and neck in a race to build Canada's first central power station. Ahearn was soon supplying arc lighting for mills in Ottawa.

Wright, too, was a formidable worker. He constructed the first electric motor to be built in Canada and used one to grind coffee in a Yonge Street store. A local clergyman took the occasion to denounce the machine's labor-saving advantages in scathing terms. In thunderous tones he labelled it "an instrument of evil since it will release girls from honest toil to wander about the streets and fall prey to the wiles of Satan."

Around the same time, Wright demonstrated arc lights at McConkey's restaurant in Toronto and there was free ice cream all around.

By 1881, he had a power station and arc lighting system serving 15 stores in downtown Toronto. His generating plant was driven by surplus steam from the Toronto World newspaper.

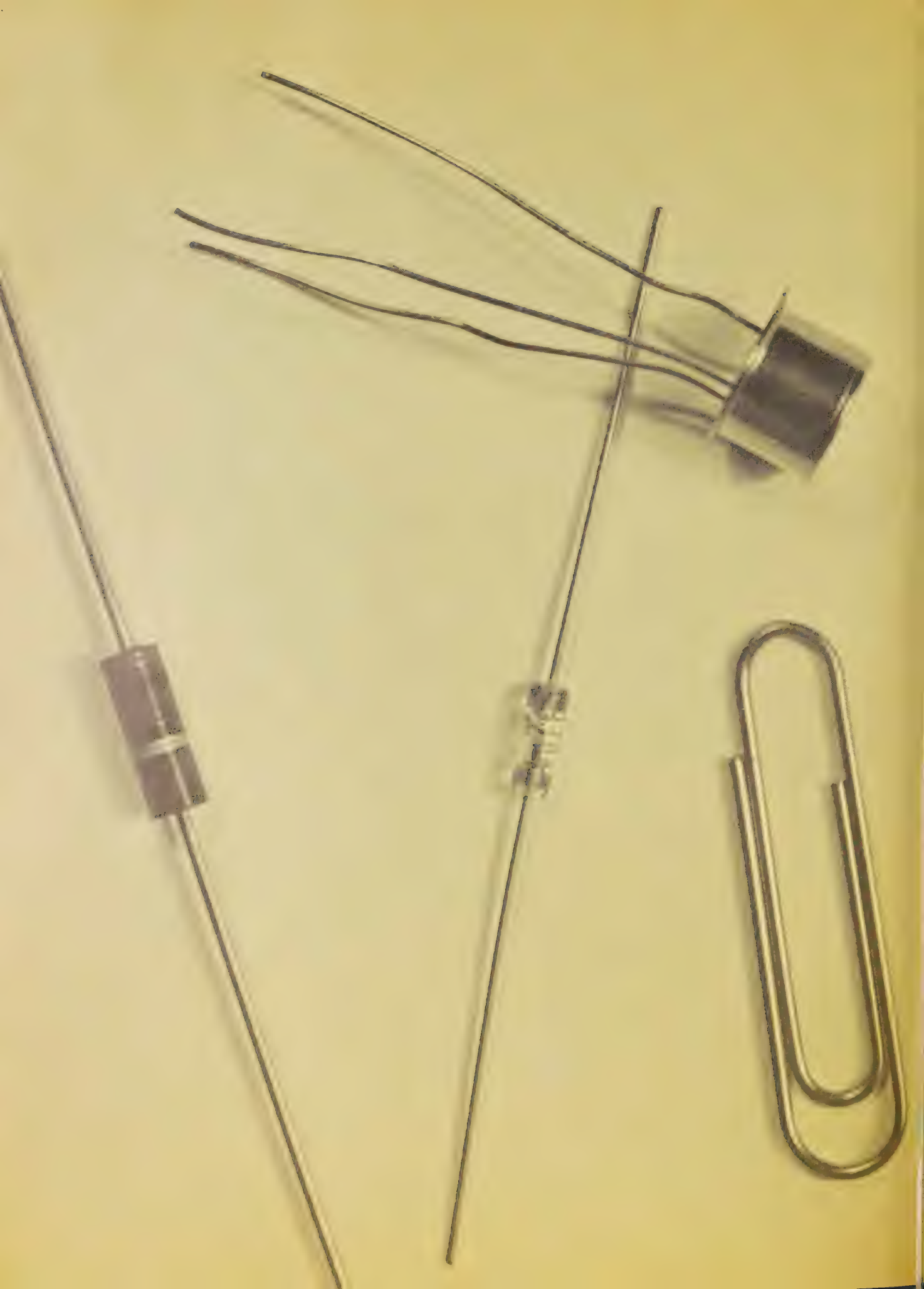
Two years later, Wright helped to develop one of the first electric railways, running from Strachan Avenue to the CNE grounds. And the telephone was coming into general use.

Edison, meanwhile, was hard at work in New York City where his Pearl Street steam station of 1882 was heralded as the world's first central electric plant for incandescent lighting.

Up to this point, virtually all developments utilized direct current embodied in Edison's system of generation and distribution. A serious limiting factor was the short distance it was practical to transmit D.C. power — little more than a mile — so that generators were required

(*continued on page 20*)

*Lucretius Carus knew, in 56 B.C., magnet attracts iron filings but ies passed before this knowledge it to work.*



# spotlight on 2000 A.D.

by Les Dobson

## when transistors have grown whiskers we'll be talking to computers and measuring time in pica seconds

Crystal balls are capricious instruments at best and experience often proves embarrassing for those who attempt to predict the future. And today's prognosticators are having a hard time keeping their flights of fancy abreast of reality amid the fantastic feats of the space age.

Change is the only constant. Technology has advanced more in the past 60 years than in the previous 6,000. Since the beginning of the century, society has leaped from buggies to spaceships and from coal oil to nuclear energy.

Over the same period, Ontario Hydro has grown from an idea to one of the world's largest utilities. And just to keep pace with the province, its performance of more than half a century must be duplicated in a decade.

Hydro planners foresee an electrical load on the order of 20,000,000 kilowatts for Ontario by 1980 — compared with the present 7,800,000 kilowatts. Since electric power will play such a predominant role in the future, let's see what the "experts" forecast for us by that magically rounded date of 2000 A.D. Remember, it's only 34 years away.

Home will be a pretty nifty place and a whole lot better organized than it is now. Mother will have her own computer, which will digest the week's menu and see that the food is automatically taken from storage, cooked and served at the appropriate time.

Household automatons will probably sweep the floor, wash the windows and dispose of the garbage. If dad can purloin the punched cards, he might even persuade the domesticated robots to cut the front lawn (grass is unlikely to be automated by the year 2000).

High-frequency sound waves will "wash" the dishes and clothes as they've never been washed before. Microwaves will cook food in seconds. And there's talk of video-phones and electronically-delivered newspapers, wrist-watch radios and shopping by TV.

Transportation may also undergo further radical changes. Some predict that air-cushion devices will replace the wheel, that automobiles will run on improved electric batteries, on fuel cells or nuclear power. Rocket belts and moving sidewalks are mentioned, too. Many foresee a come-back for electrified mass transportation.

Improved and revolutionary electronic circuitry holds the key to many developments likely to transform the world of 2000 A.D. almost beyond recognition. Microelectronics threatens to make transistors obsolete in the near future. Integrated circuits, including the equivalent of dozens of transistors, diodes, resistors and other electronic components, are already being fabricated on chips of silicon so small they could be carried off by an ant.

By the end of the century, electronics could control just about every industry, monitor every operation and have something to do with every business.

So much for the year 2000. If you're slightly disappointed it's probably because you've grown accustomed to the fantastic.

Already that mysterious beam of coherent light — the laser — has created three-dimensional images in mid-air and its use in communications promises to shake even the most blase among us. One slender laser beam would carry 900 million voice channels and 14 million TV channels.

The laser has been developed as a death ray that can vaporize matter 100 feet away, and extending the range is just a question of time. It also has possibilities as a surgical tool, with a focus so fine it will be able to treat a single red corpuscle.

What about the power behind these new devices? Hydro's 1980 forecast shows nuclear stations providing slightly more than one-third of the total resources. Hydro-electric and coal-burning stations share the remainder in approximately equal parts.

The world is already endowed with a variety of nuclear reactors embodying differing principles of operation and the type being employed in Canada's first three nuclear-electric plants — all in Ontario and designed to operate as part of the Hydro grid — was developed as the most promising for Canadian conditions. These pressurized heavy water reactors use natural uranium, of which Canada has an abundant supply, and heavy water to moderate or slow down neutrons in the reaction process and as a coolant to transfer heat to the steam generator.

Most American designs employ enriched uranium — a more powerful version of the natural thing — and ordinary water as coolant. The British are using graphite-moderated reactors and prefer a gas, such as carbon dioxide, for cooling.

Canadian nuclear scientists are also developing a boiling light water (BLW) reactor to combine some of the advantages of natural

(*continued on page 21*)




*...ubly, the integrated circuit, ... contains the equivalent of 16 ...istors, 24 resistors and one ...ctor. Its size is compared with a ...er, diode, transistor and standard ... chip on opposite page.*

to be located practically on the customer's doorstep.

At this juncture, a young Serbian named Nikola Tesla, who, ironically, came to New York to work for Edison, introduced an alternating current power system — and the battle was joined.

Edison stuck to his guns, waging a vigorous campaign against A.C., claiming it to be dangerous. His warnings apparently reached the ears of the New York State legislature, which chose A.C. for Sing Sing's electric chair — a decision proclaimed to the rooftops by A.C. opponents.

Also anti-A.C. was the eminent British scientist Lord Kelvin. When a far-sighted group decided to tap the mighty Niagara River and feed hydro-electric power to Buffalo, he cabled Edward Dean Adams, president of the Cataract Construction Co.:

"Trust you avoid gigantic mistake of adoption of alternating current."

Adams was unabashed and in 1896 the mayor of Buffalo threw a switch to send alternating current surging from Niagara Falls into the Buffalo system. Two years later, power interests in Hamilton used alternating current for a new feat — transmission of hydro-electric power 35 miles from DeCew Falls to Hamilton.

The A.C.s had triumphed, mainly because the ease with which A.C. current may be stepped up and down by transformers enabled them to overcome the distance barrier. Half a century later, power engineers were taking a new look at the long-distance transmission of large blocks of power by direct current — a break-through made possible by a Swedish technical development facilitating the conversion of A.C. to D.C. and back again.

Several countries are now finding direct current more economical in some instances for long-distance transmission, reverting to A.C. for local distribution. The United States, for example, is building two 750,000-volt D.C. lines which by 1971 will carry power 800 miles from hydro-electric stations in Oregon to the U.S. Southwest.

Back to the past and another dispute, this time about cycles. Frequencies ranging from 16-2/3 to 33-1/3 cycles a second were bandied about by private companies establishing themselves on both sides of the Niagara River. Finally, they plumped for a 25-cycle compromise, the frequency which the future Ontario Hydro would inherit.

Appliances at this time were few and far between, although the sewing machine had been electrified since 1880. Electro-plating and electric welding were established arts and the elevator was on the way up.

Yet power was still an expensive prerogative of the well-to-do — a luxury of illumination for which householders paid something like three cents a night for each light installed in their parlor, more in some other rooms. And a penny would buy more than thoughts in those days.

But techniques continued to improve, costs fell and by 1906 the Toronto and Niagara Power Company completed a 75-mile line of steel towers between Niagara Falls and Toronto. Power hummed along at 60,000 volts, the highest possible, it was thought, for economical operation.

Meanwhile, a new movement was emerging in Ontario — a drift towards the public ownership of power systems. At first the idea received scant attention, but it gathered momentum and swelled from a mere trickle of thought to a flood of opinion.

Causes were multiple. Local industry was in dire need of power. Wood, the traditional fuel, was not so abundant and the high cost of coal was aggravated by a strike in the mines of Pennsylvania. Feeling against the private power companies and their rates ran high.

Power must be cheap if industry is to prosper, went the reasoning of the day, but there appeared little likelihood of co-operation. Many municipalities — they included London, Guelph and Stratford — were already operating their own power plants in competition with private interests and other cities began to think along the same lines.

So by 1902, while the private companies were planning to develop Niagara power still further, many of the larger Ontario centres were investigating the possibilities of operating municipally-owned systems.

The remainder of the story belongs to them, and Ontario Hydro.

uranium fuel with those of an ordinary water coolant. This development may be another important step towards lower cost nuclear power and Hydro-Quebec has already announced plans for a $100 million BLW plant at Becancourt, on the south shore of the St. Lawence.

Technological advances will continue to be incorporated as they are worked out and some contend that nuclear-electric power will eventually be produced at costs even below those for hydro-electric power, which utilizes the energy of falling water.

Conventional nuclear power is only the beginning. After fission there's fusion, and significant progress has been made towards containing this stupendous energy whose only "practical" application, to date, is the hydrogen bomb. Super-high temperatures are the biggest problem. Several methods are under study but the "pinch" technique, which endeavors to use deuterium gas to the criticial temperature of 370 million degrees centigrade within the confines of a "bottle" woven from magnetic lines of force, looks most promising.

Certainly, nuclear-electric power figures prominently in any assessment of the future. United States estimates of its nuclear-electric capacity go as high as 700,000,000 kilowatts by the end of this century — 350 times its present capability.

The fascinating drama being unfolded in man's exploration of matter is suggested in these words by Dr. Glenn T. Seaborg, chairman of the U.S. Atomic Energy Commission: "One of the most fascinating aspects of this whole field of nuclear energy is the extreme range of the work — for while we develop nuclear propulsion to take us to the stars and at the same time analyze the cosmic rays that come from them, we also explore the very nature of matter, the very substance of the stars, of ourselves and all that exists. It is a most exciting field and a most exciting time to be working in it!"

Other possible power sources are not being neglected. Long-range possibilities suited to the central generation of electric power are the two concepts of magnetohydrodynamics and magnetoplasmadynamics or, to save a mouthful MHD and MPD.

The goal here is to generate electricity by passing a stream of ionized argon or helium at high temperature through a magnetic field. The gas acts as a conductor and creates a current as it passes through the magnet.

Equipment for this method of power production would require no expensive moving parts, and it has been suggested that the 1,600 to 1,700 degree temperature needed to heat the gas is readily available at existing steam-electric plants.

Portable generators are also under development. Fuel cells, which create electricity by chemical reaction, already provide power for America's manned space capsules. There are thermoelectric generators, which obtain their power from the heated junction of two different metals, and thermionic converters, similar devices but with the current flowing through a gas rather than a solid. Solar heat, or heat from several miles below the earth's surface, may one day produce electricity in appreciable quantities.

Although none of these principles is really new, the reason for the present revived interest is the discovery of materials which could make them a practical proposition.

The thermoelectric generator is based on a phenomenon discovered in 1821 while the MHD generator dates back to Michael Faraday, who proposed a scheme to tap power developed as oceans cut the earth's magnetic field. Fuel cells are practically sprouting whiskers while the thermionic converter is simply a refinement of the Edison effect, discovered in 1883.

Portable power plants such as these could present a serious challenge to the central station concept of generation and distribution as represented by Hydro — a challenge very much in the area of speculation and one which can be met by constantly improving efficiency and service.

New developments are equally on the side of the power utilities. Microwave or laser beams may one day replace costly and cumbersome transmission lines. It would require only a few nuclear power stations, each with a capacity of about 60,000,000 kilowatts, to supply the entire electrical needs of North America.

Before packing away the crystal ball it might be in order to consider for a moment the vast social changes which will inevitably follow in the wake of these technological developments.

Computers are already causing concern to management, labor and sociologists. One prophet of automation predicts that within the next generation the work of 60 million Americans is "practically certain to be obsolete." The thinking is that two or three per cent of the work force will eventually produce all necessary goods and services.

The problem of the Intellectronic Age will be one of increased leisure time. The working week appears almost certain to shrink, vacations will be longer, retirement earlier, education extended.

Up to now, computers have been dependent on coded instructions, but present developments indicate they will in time respond to the human voice. Already they operate at the rate of a billionth of a second per step and they may soon take a step every pica second (a pica second is to a billionth of a second what a second is to 30 years.)

Will automation transform the underdeveloped nations? Will machines of the future free man from historic drudgery and give full play to his creative ability? Or will they merely lead to a bored world populated by idle pleasure-seekers sitting in front of the latest-model idiot box?

Even the futurists are scratching their heads.

# sign of the times

hydro is getting all dressed up in the new look as it celebrates sixty years of progress

Whether or not blondes do have more fun, Hydro isn't prepared to say. But it is convinced of the importance of appearance.

That's the philosophy underlying its new corporate identity program, now in full swing, featuring the interlocking orange and vermillion "OH" symbol of Hydro in Ontario. The public, it is reasoned, tends to view organizations and their products subjectively and many of its impressions are the result of visual appearance.

Symbols are a kind of mental shorthand, instantly interpreted, and the new Hydro insignia has been designed to reflect the character of the organization it represents — an efficient, up-to-date and service-minded body dedicated to the interests of its customers.

And the new look is really beginning to get around — on wheels, in the air and through the mail. It's also turning up cast in concrete, growing in gardens and outlined in ice cream.

Launched last year, on the eve of Hydro's 60th anniversary, the symbol program has already been adopted by nearly 70 municipal utilities across the province, as well as Ontario Hydro. It marks the first time the utilities have been able to display visual evidence establishing them immediately as members of the Hydro family.

In most cases, both large utilities like Sudbury and Toronto, and smaller operations such as Bancroft, Havelock and Georgetown, are implementing the program step-by-step, introducing the new look to vehicles, equipment and stationery as supplies run out or repainting is scheduled. Some, like the Windsor Utilities Commission, greatly enlarged by recent annexation, have been in a position to move faster. Twenty of their 40 vehicles are now finished in "Hydro white" with the symbol on their sides.

"In these days of soaring costs, economy is very much to the fore in our program," explains Jack Brown, symbol co-ordinator, "and utilities adopting the new look actually save money in the long run." Quantity buying is one of the advantages he cites.

"I don't think many appreciate the extent of the savings to be achieved through large-scale ordering. Take crests, for example. Designed and manufactured for one small utility, crests can cost upwards of two dollars. By ordering in volume, we can supply them at 25 cents apiece."

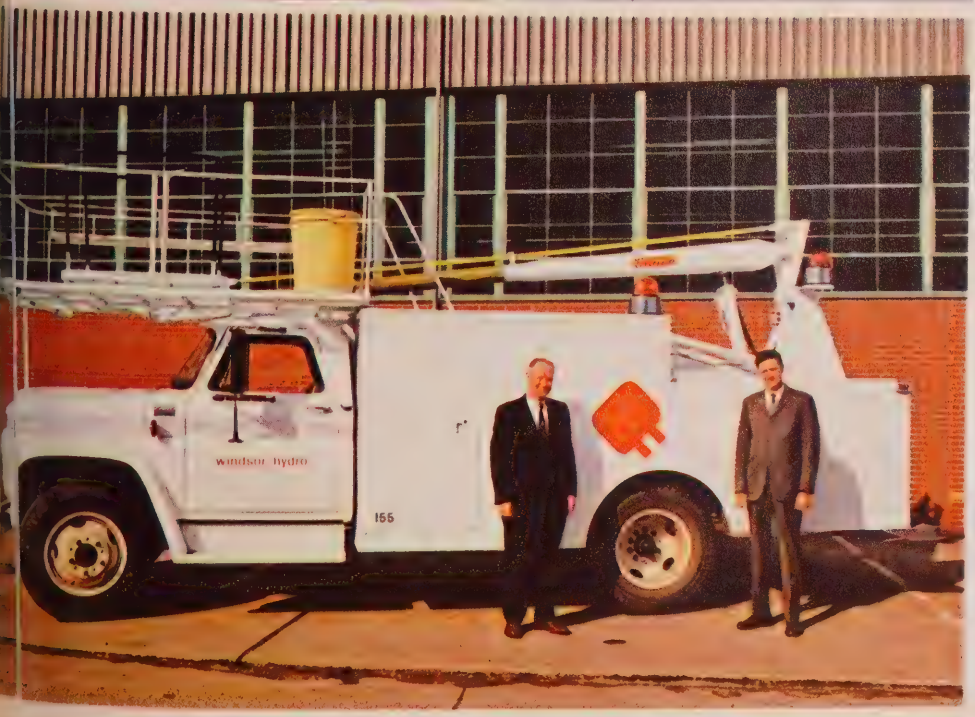
Vinyl vehicle markings are another money saver. "In Toronto", Mr. Brown points out, "it would cost $32 to hand letter both sides of a












vehicle — a process which also ties up a truck for two days. Using self-adhering plastic materials, a complete job can be done for $10 — and in a quarter of the time. They're color-fast and more durable than paint."

Stationery and business forms are other areas where savings accrue under the new symbol program since the utilities are provided with master artwork.

At Ontario Hydro, where there are an estimated 5,000 possible applications, the symbol program is pushing ahead. Over 350 of Hydro's 1,600 vehicles now sport the new look and the number is expected to reach 700 by the end of the year.

It's a gradual process and one with more facets than most people imagine. Down on the St. Lawrence, for instance, there's a 25-foot tug boat all dressed up in the new Hydro color scheme with symbols prominent fore and aft. The Georgian Bay "flotilla", which includes a houseboat, will also carry the new colors in marine circles. In the Niagara and Eastern Regions, watering cans are used to keep the symbol growing. It's been outlined in carpet plants outside the Hamilton and Belleville offices and near the floral clock at Queenston.

Other off-beat applications have included the dessert course. The symbol was eaten by 400 guests of the Sarnia Chamber of Commerce on Hydro Night, last fall. Guests found the colorful OH initials outlined smack in the centre of their ice cream.

And in the middle of nowhere, the symbol will beckon for miles from the 240-foot surge tank of the Aguasabon generating station on the lonely north shore of Lake Superior. Also in the Northwest, it has been cast in concrete to form a fitting gateway to the operators' community at Ear Falls.

But the Niagara district wins hands down for the most original application. The widow of a long-service employee of a local Hydro system approached the startled manager requesting permission to have the symbol carved on her late husband's headstone. With some misgivings, the manager acquiesced.

*Self-sticking plastic materials greatly simplify symbol applications which range from helicopters to tug boats. Shown beside the Windsor Utilities Commission truck are manager W. G. Fisher, left, and W. S. Mullin, superintendent of Hydro division. The girls decked out in the new look are guides at the Robert H. Saunders-St. Lawrence station.*

# constant

In the 60 years since representatives of the Ontario municipalities marched hundreds-strong on Queen's Park to request a system for the supply of cheap electric power, Ontario Hydro has grown into one of the world's greatest electrical utilities.

Many changes have been apparent in this period. Mighty rivers have been harnessed and entire landscapes transformed. Coal-burning plants capable of supplying our largest cities have been built and nuclear power stations are making their appearance on a grand scale.

But some things remain constant, one of the most important being the concept of efficient service combined with the sale of power at cost. Another constant is the unique relationship between the provincial body and the municipal utilities. Surprisingly, perhaps, this latter area is the one in which the most misunderstanding seems to exist.

To review this relationship, and perhaps cast new light on the Hydro family of municipalities, Hydro News interviewed Dr. James E. Wilson, of Barrie, president of the Ontario Municipal Electric Association, the central organization of the municipal commissioners.

The OMEA was formed in 1912, shortly after the original 14 municipalities contracted to buy power from a fledgling Ontario Hydro. Since then, the association has progressed steadily and now represents nearly all of the 357 Hydro municipalities across the province.

Here are some of the questions put to Dr. Wilson, and his replies:

QUESTION: *Although your organization has worked with and helped to guide Ontario Hydro on municipal matters for more than half a century, there is still some confusion in the public mind concerning the Hydro "family" relationship. Keeping in mind the new generation of readers, could you help straighten us out on this unique partnership?*

ANSWER: You are perfectly right, it is unique. And the basic concept is to provide the people of Ontario with power and good service at the lowest possible cost. Each Hydro municipality pays Ontario Hydro, at cost, for the power it receives and then supplies its customers, again at cost. Ontario Hydro acts as trustee for the municipalities and also as the co-ordinating authority. You might say the municipal utility fulfils the role of retailer — without, of course, the profit motive.

Actually, I think there is a close parallel between Ontario Hydro's operations and those of our public utilities commissions. Each is the creature of a legislative body — Ontario Hydro of the provincial government, the PUC of the municipal council. Each organization controls its own day-to-day operation, although the approval of debentures and capital works rests ultimately with the governing authority.

In each case, the enterprise is self-supporting and capital is supplied from operating income.

QUESTION: *How is a Hydro municipality formed in the first place and how are its members elected?*

ANSWER: Any municipal corporation may apply to Ontario Hydro for its supply of power and put the issue to the electors once it receives an estimate of costs. All municipalities classed as towns or cities must entrust the operation of their utility to a commission.

In answer to the second part of your question, all PUC members are elected during the municipal elections with the exception of the Toronto, Ottawa and Hamilton commissions which are appointed. Elected commissioners choose one of their number as chairman at the first meeting each year.

QUESTION: *What about the day-to-day running of the utility?*

ANSWER: I must stress, of course, that the elected commissioners are the policy makers and provide guidance. Actual operations performed by independent professional usually headed by a manager or superinten Senior members of these staffs belong t Association of Municipal Electrical Utilit body which works closely with the OME is chiefly concerned with business manage and the technical problems of power s and distribution. The professional ski AMEU members is second to none and elec authorities throughout the world draw on experience.

QUESTION: *Will you give us a brief o of the structure of the* OMEA *and its rel ship with the municipalities?*

ANSWER: Well, the OMEA has nine di and represents a total of 340 Hydro m palities. Each municipality is entitled to three delegates, both to district meeting those of the central association. Delegate district officers, either from a list of prosp candidates or from the floor, at the a meeting of the respective district.

The business of the central body is ha by a board of directors whose presiden first vice-president are elected from the fl the OMEA's annual meeting. The retiring dent and senior district officers compri remainder of the board. We also employ time secretary-manager.

I think you will agree that there is a obvious and democratic link from th tomers, through the PUCs, to the direct the OMEA.

QUESTION: *Power distribution is big ness these days and I understand th municipal utilities have a large share business. Can you give me any indicat their assets?*

ANSWER: According to Ontario H annual report, the equity accumulated

# concepts

**Change is the order of the day but as Dr. J. E. Wilson, president of the Ontario Municipal Electric Association points out, some of the basic concepts governing Hydro remain constant**

unicipal commissions through sinking fund ovisions stands at nearly $400 million. In dition to this sinking fund equity, the value municipal power facilities and other assets ings the total to over $900 million. This urs out what I said earlier — that the munici- commissions and Ontario Hydro are part- s in the generation, distribution and sale of ctric energy on a very large scale.

UESTION: *The sinking fund equity cer- ily is substantial. What advantage to municipalities is this $400 million invest- nt?*

NSWER: In a nutshell, the interest from this ney is used to reduce the cost of power to an municipality in proportion to the invest- nt it holds.

UESTION: *From time to time we hear the uestion that the public utility commissions hould be abolished and their duties turned to a committee of council. Do you think would be a better system?*

NSWER: No. Of the two, I feel that the dntages lie very definitely with the present ystem. The principle by which the electric tilities are entrusted to commissions makes it ossible to separate clearly and unequivocally uns derived from taxes and funds derived rom the sale of power. It is not the taxpayer ut the customer, who is somewhat like the hareholder of a private corporation, who sup- ort the utility.

Since the number of customers and the num- er f taxpayers will never be the same, it has en been considered only right and proper hat he two classes of revenue be kept separate. Also, the present system produces dedicated ers whose main allegiance in municipal affairs is to the efficient and economical oper- tion of their utility. There will also be less onflict of interest among these men — a gas company employee, for example, will hardly seek election to a Hydro commission. They are, therefore, in a better position to meet competition from other forms of energy.

However, I don't contend that because things have worked well in the past, we should close our minds to change. We must be flexible and prepared to adapt ourselves to different ways of doing things.

QUESTION: *That raises a point. Hydro is sometimes criticized for its advertising and sales promotion on the grounds that it shouldn't compete with private industry. What are your thoughts in this regard?*

ANSWER: Frankly, I'm surprised that this should be a contentious area. Our need to compete is implicit in our charter to do business at the lowest possible cost. Any loss of load to the competition is bound to cause financial strain. It is an established fact that the more power used by the individual customer, the less the cost per kilowatt-hour.

QUESTION: *Finally, Dr. Wilson, a question about the future. What, in your opinion, is the greatest challenge the Hydro family must face?*

ANSWER: As you know, Ontario Hydro has practically exhausted its sources of new hydro-electric energy and in future must rely mostly on thermal power to meet rising demands. This means we will have to employ every economy to match Quebec, Newfoundland, and British Columbia, who still have an abundance of undeveloped water power, as an attraction for industry.

In addition to maintaining sound business practices, Ontario Hydro and the municipalities must continue to capitalize on every technological advance. We may find, eventually, that our vast resources of uranium and our growing nuclear know-how, will help us stay out in front.



# conference for management

## the men who manage the public utilities of Ontario met recently at Ottawa in a brass-tacks approach to mutual problems

"The time has come," the Association of Municipal Electrical Utilities said, "to talk of many things" — and they did at their annual summer conference for management held this year in Ottawa. But ships and shoes and sealing wax were not on the agenda. Instead, their topics ranged from underground distribution to public relations and from safety to optimum voltage levels.

Highlighting the convention, in the opinion of many, was the extraordinary evening session with the Alice in Wonderland overtones but a down-to-earth approach. Seated on a dais and surrounded on all sides by most of the 400 delegates in attendance, were four brave men. They were Andrew Frame, Burlington, representing the OMEA; Charles Phelps, Sarnia, AMEU; D. J. Gordon, Ontario Hydro and Gordon Stacey, Guelph, the moderator.

Referees in charge of the free-wheeling session, they fielded questions from right, left and centre and helped keep proceedings on the rails, albeit ruling with a lenient hand. Audience participation was, of course, the basis of the "beef" session and, while they "talked of many things", the subject all boiled down to good public relations — or its lack.

One problem pin-pointed by more than one speaker was that a sort of "in" attitude existed among the members of the Hydro family in their approach to public relations. "We have been guilty of basking in the reflection of our own publicity," offered one delegate, "and this is sometimes very different from our image as viewed by the public."

Press treatment of local commission meetings drew some heated discussion and there were conflicting opinions. "Unfair and concerned only with the sensational" was one charge while another delegate thought that in 90 per cent of the cases "we were well treated."

"Buy space," one advised, "that's a sure way of getting your story across."

But time and again during the give-and-take came the suggestion that local service was the key to a sound relationship with the public. "Images are not created by the newspapers — only displayed for all to see," one of the moderators replied to a question. "Our business is service and we must be customer-oriented. I don't think we are moving fast enough in this direction in a competitive era."

"There's a lot of talk about images," offered another, "but an image can only reflect real — you can't make a silk purse out of a so ear."

And again: "We should concern ourselv with what the individual customer thinks abo his PUC — not what people in Oshawa thi about Punkydoodles Corners."

The consensus of the session seemed to that good public relations was something whole lot deeper than keeping on good ter with representatives of the press. It must be at the utility and permeate every facet of operation, the reasoning went, and it is neith possible, nor desirable, to control what the pr has to say, except by offering little to critici

OMEA President Dr. J. E. Wilson brought session to an end with a few words on duties of local Hydro commissioners. "I that a lot of commissioners like to be m agers," he said, "but it says in the Comm sioner's Handbook, his first duty is to ens that competent personnel are in charge of utility — and then to give them a free han Only important issues should be raised at c mission meetings, he felt, as preoccupation details tended to make for an unfavor press.

In declaring the conference officially o AMEU President E. F. Burbank, Toronto Hy

*Easy targets for cabbages and other missiles, these four men fielded questions on public relations at an evening "beef" session. Left to right on the platform are: Charles Phelps, Sarnia Hydro; D. J. Gordon, Ontario Hydro; Andrew Frame, Burlington PUC; and Gordon Stacey, Guelph, moderator.*



*Many aspects of underground distribution were examined by this panel. Left to right: Al Armstrong, Etobicoke; Lloyd Loveys, Kitchener; Ken Richards, St. Catharines; A. J. Healey, York Township; Gordon Sutherland, Hamilton; W. S. Mullin, Windsor; K. R. Taylor, Brampton; Bill Fisher, North York; and Barney Kellam, Ontario Hydro.*



ressed the preparation which had preceded e event. He said the program involved over men, from the utility industry and beyond, no were prepared to give their best in order at the pool of information in the operation the local Hydro systems might be shared.

"From my knowledge of the program," he ntinued, "I know that you will benefit and se benefits will rub off on your own oper-on to the benefit of your customers."

Bearing out the president's remarks was the nel on underground distribution. This took form of an exercise in which a hypothetical nmunity, "Satellite City" was constructed on per, embodying the latest trends and a sound gineering approach to total underground tribution.

The fictitious community demonstrated in ail the various types of load which might be icipated, including single-family dwellings, ltiple dwellings, row housing and high-rise rtment buildings — some with electric ting and some without. Also shown were rches, schools and shopping centres as they ght appear in a neighborhood development. presentation was planned in six parts, ering the complete electrical system, with n panelist, all members of the AMEU's Un-ground Committee, responsible for one.

Features of the underground system included 27.6 kv supply, 13.8 kv distribution, and loop feed for security of service. Costs were an underlying consideration in the design and such factors as safety, ease of maintenance, new materials and load growth were all taken into account.

In his summation, panel moderator J. G. Sutherland, Hamilton Hydro, noted that, in general, underground construction presented no great technical problems. Extra cost was the only drawback, he said, and even this was declining rapidly.

"If the cost of installing underground could be collected over a number of years," Mr. Sutherland believed, "as with an increased rate or a monthly assessment, then it would present no hardship to the original owners and in all cases the tenants would be paying for the improved appearance and the other advantages obtained by underground distribution as they were enjoyed."

Much progress had been made in the area of underground distribution, he concluded, but much remained to be done. "It is time we all entered the field so that we can gain proficiency and experience on a deliberate basis rather than on a crash basis. . . . The public will be much more tolerant of the existing overhead if we can demonstrate our intent by moving toward buried plant as rapidly as practicable."

Planning for "Act of God" emergencies such as floods, hurricanes and sleet storms was the subject of another panel — this one chaired by R .M. Senyshen of Kitchener PUC. Acknowledging that each utility's emergency procedure must be individually tailored, the panel confined its deliberations to measures common to all — such as communications, personnel deployment, utility maps and the provision of mutual assistance.

The association, it was revealed, had examined the problem of mutual assistance at some length and had decided that the operations engineer of each Ontario Hydro region should act as liaison officer in the event of an emergency. Lists of equipment had been drawn up to determine a utility's potential in terms of providing assistance.

Panel member N. W. Timmerman, director of Ontario's Emergency Measures Branch, Attorney General's Department, briefed delegates on the direction in which his work was proceeding. He said that a communications network had been set up spanning the province so that, in the event that a complete breakdown of normal facilities occurred, messages could be put through. He revealed that many radio

*group paused for the camera de Ottawa's famed Chateau ier, site of the conference. o right are: Charles Ellerbeck, York; W. J. Fisher, New nto; Jim Wickiam, East York; Honan, New Toronto; Dr. J. leming, Dundas; and D. J. nan, Mimico.*



*"Act of God" emergencies was the topic discussed by this panel. Left to right: Rudy Senyshen, Kitchener; N. W. Timmerman, Emergency Measures Branch; D. M. Seath, Stratford; Ross Lamb, Toronto Township; and W. A. Secord, York Township.*



stations now had their own standby sources of emergency power.

"The municipal EMO co-ordinator is your contact," the speaker said. "He is a civic or county employee whose basic responsibility is to help elected and appointed officials in developing plans for those areas for which they are responsible under the Emergency Measures Act. The co-ordinators will welcome suggestions from people like you for handling emergency situations."

Mr. Senyshen suggested that the various districts of the association invite EMO representatives to their meetings to assist in planning for emergencies. "If we don't get moving on our own," he said, "we will eventually be required to do so."

George Wilkinson of the Canadian Westinghouse Company won plaudits for a talk in which he viewed the future from the point of view of electrical distribution. Forecasting a staggering increase in generating capacity in Canada, from 29,000,000 kilowatts at present to nearly 100,000,000 kilowatts by 1985, he said Ontario alone would be producing 23,000,000 kilowatts by 1980. This had a direct bearing on the AMEU, he pointed out, "because you, individually and collectively, represent management responsible for the distribution of much of this energy."

Among his predictions were: competition to increase; distribution systems to become so complex as to demand the use of computer techniques; service continuity to become the prime target; and marketing approaches to grow increasingly customer-oriented. Creative management in its truest sense, he concluded, would bring these things about.

In discussing optimum utilization voltages (the voltages used in homes and industry), R. L. Hicks, Toronto Hydro, suggested that more and more countries were standardizing at 240/480 volts. He suggested the house voltages in use here, 120/240 volts, might be a handicap in underground distribution and in meeting load density increases.

"It is up to us as utility men," Mr. Hicks said, "to work out a plan which will make a generally higher residential service voltage an accomplished fact by 1975 or 1980."

In line with tradition, the conference ended with the annual meeting of the Electrical Utilities Safety Association of Ontario. Retiring president H. J. Schmidt of the Wilmot Telephone System revealed that in 1965, association staff travelled 121,000 miles in the interest of safety. Work had included 209 crew safety meetings, 403 field surveys, 41 accident investigations and 198 management visits.

In a continuing program, 3,500 visual screening examinations had been carried out in 1965 for a total of 5,000, and 12 courses on live-line maintenance were held, attended by 111 linemen from 26 utilities.

Charles S. Phelps, manager of Sarnia Hydro, was elected president of the Safety Association.

# hydro joins the celebrations

## extensive Centennial plans described to District 5 OMEA delegates at Niagara-on-the-Lake

Delegates attending the annual summer me
ing of the Ontario Municipal Electric Assoc
tion enjoyed a rundown of Hydro's extens
Centennial plans, learned about Expo '67 a
heard an enlightening address by Dr. J.
Wilson, president of the parent association.
addition, they were all guests of honor at
official opening of the new headquarters of
host utility — Niagara Hydro-Electric Co
mission.

In outlining Hydro's Centennial plans
both the provincial and municipal levels, Jar
A. Blay, director of public relations for Onta
Hydro, said: "In view of the position a
stature of Hydro, our Commission and y
parent Association decided that it was impe
tive that we actively participate in our countr
100th birthday celebrations. To do otherw
would be to shirk our responsibility as one
Canada's largest public enterprises."

As described by Mr. Blay, Centennial p
ticipation encompassed five areas. These we
participation in the provincial governme
Centennial Centre of Science and Technol
in Toronto; a major exhibit at the Canac
National Exhibition; the Hydro Hall
Memory at Niagara Falls; participation in
provincial government's pavilion at Expo
and sponsorship of the Resources For Man
tion at Expo with Hydro-Quebec.

Emphasizing that no final decisions had b
made, Mr. Blay said Hydro's contributior
wards the $22 million Centennial Centr
Science and Technology could take the forr
displays, exhibits and models portraying
part of electricity in modern industrial t
nology and society. The centre would not
museum in the accepted sense, he said, bu
strongly oriented toward education.

At the CNE, delegates learned, Hydro wa
troducing a completely new and fresh appr
this year — an exhibit which would form
basis of the 1967 display. A puppet show
ing with many aspects of the Hydro
would be the focal point of the CNE attrac

In reviewing progress of the Hydro Ha
Memory project, which he termed "one o
most significant," Mr. Blay urged delegat
get on with the task of compiling the hist
of their individual utilities. "This is your
tennial effort," he said, "and we want to be
to portray the role of every municipal sy

*It was a proud moment at Niagara-on-the
when Ontario Hydro Chairman Geo
Gathercole pulled a cord to officially unv
new local Hydro centre. Left to rig
Dr. J. E. Wilson, president, OMEA; Lord
W. E. Theobald; W. S. Jennings, commiss
Mr. Gathercole and R. W. Howarth, chai*

the success of the Hydro enterprise."

To be located in the old Sir Adam Beck nt at Niagara, the Hydro Hall of Memory l have as its central theme, Public Power d Its People. It is a joint undertaking of the EA, the AMEU and Ontario Hydro.

'Perhaps the most spectacular way in which will be contributing to Canada's 100th hday celebrations," Mr. Blay said, "is ough Expo '67." At the Ontario pavilion, dro's chief role will be to assist with the ting effects, but help will also be extended ther ways. This will include assistance with ibits and the loan of the Sir Adam Beck rcus", Hydro's earliest mobile display effort. o-sponsorship with Hydro-Quebec of the ources For Man section of the Man The ducer pavilion will constitute the major tribution, the speaker said. This exhibit will v the various sources of energy in their ent state of development, how they benefit nkind, and suggest their role in days to e. It will be located in the largest of Expo's ne buildings, which is adjacent to the main ading area of the exposition's transporta- system.

In addition, Mr. Blay pointed out, a collection of portable displays showing various phases of electrical history would be made available to municipalities on request. He thought these displays would prove invaluable to utilities wishing to set up a Centennial display in their offices or elsewhere.

District 5 delegates also enjoyed a general description of Expo '67 progress from B. R. Bourke, head of Expo's municipal section. He said they were geared to handle a maximum one-day crowd of 330,000 and that two parking lots would accommodate 22,000 cars. He thought that anything less than four days would be a "superficial" visit.

In a short but thought-provoking address, Dr. J. E. Wilson reviewed the unique relationship governing the Hydro "family" and suggested that changes might be desirable in the method of selecting local commissioners in the light of growing responsibilities.

Strongly in favor of the basic tenets of the present system, whereby the tax-supported municipal services are separated from those which are self-supporting, he thought the high change-over of elected commissioners might constitute a weakness in a business which is already gigantic and constantly growing. He said it was becoming ever more difficult to induce successful businessmen to run for office and that these were the people who could materially strengthen the position of the public utilities commissions in coping with conditions as they exist today.

Presiding at the official opening of the new Niagara Hydro offices, Ontario Hydro Chairman George E. Gathercole complimented the local staff and commissioners on their new facilities and drew attention to the natural beauties of Niagara-on-the-Lake — "a town steeped in history and the site of many 'firsts'." Among those he enumerated were: first capital of Upper Canada, first Masonic lodge and first Agricultural Society. He also observed that this was his first such opening since becoming chairman.

R. W. Howarth, chairman of the Niagara utility, noted that the new building was completely debt-free and involved no debentures. "I believe we have taken the proper course," he said, "with facilities which are adequate for our operation for years to come."






## Thunder Bay to start up

Ontario Hydro's Thunder Bay coal-burning power station at the Lakehead is being geared to produce power this coming winter. "With the sharp surge in economic activity, growth of power consumption in Northwestern Ontario is reaching the point where output of this 100,000-kilowatt plant will be necessary to supply the needs of our customers," says Hydro Chairman George E. Gathercole.

In recent months, power consumption in the Northwest has advanced from between 10 and 23 per cent over the same period last year, largely through expansion in the pulp and paper and chemical industries. Earlier expectations were that the plant would not be required until the fall of 1967.

The $27 million Thunder Bay station was accepted for service in 1963. Since then it has been on stand-by to provide security in the event of low stream flows or a sharp increase in energy demands. □

## Office group meets

The importance of Ontario Hydro's power grid was stressed by Hydro Chairman George E. Gathercole at the 15th annual meeting of the Eastern Ontario AMEU Accounting and Office Administration Conference in Kingston. Tracing the development of the transmission network, Mr. Gathercole said Ontario is now served by two fully-integrated power systems, which, in turn, are linked with Canadian and American utilities.

Today, he said, there are two power systems within the province — the East System, which serves all of Northeastern and Southern Ontario, and the West System of Northwestern Ontario. He emphasized that the network will be strengthened further by a 500-mile inter-connection in Northern Ontario due to link the two systems by 1970.

"By bridging this gap, a link will be established between power utilities from Saskatchewan to Quebec," he told the 115 delegates.

Another speaker who drew considerable interest was Frank Gomer, Ontario Hydro's power costing officer, who explained the intricacies of the new method of determining power costs on a province-wide basis. "The new costing system has been designed to provide better rate stability and will allocate costs more consistently with present-day and anticipated future circumstances," he said, adding that the new method will maintain the ability to meet long and short-term financial conditions. "Above all, this method will establish more uniformity in rates between customers."

Mr. Gomer stressed that the new system recognizes past commitments of the co-operative municipal partnership, along with the importance of power costs to the industrial development of the province. "The new costing system, which was approved by the Ontario Municipal Electric Association last year, retains the basic concept of the municipal utility partnership through tangible recognition of equity ownership in Ontario Hydro."

Four changes in the new system involve modification of the debt retirement charge; the creation for costing purposes of a power district, a new costing entity made up of customers not served by the municipalities; the establishment of a fixed energy rate of 2.75 mills per kilowatt hour and the extension to 1975 of the amortization period for frequency st dardization.

Members of the newly-elected executive include: Roy Wright, immedi past chairman, Ottawa; Jim Fooks, chairman, Kingston; John Borrowd vice-chairman, Oshawa; Bill Elson, secretary-treasurer, Barrie; and direct Don Best, Peterborough, and G. D. Chambers, Gloucester Township. C Campbell, regional accountant for Ontario Hydro's Eastern Region, is visory counsel.

## Opening up new frontiers

Ontario Hydro's program of transmission line construction should open new areas of Northern Ontario for economic development, said Hy Chairman George E. Gathercole at the joint conference in North Bay of Northeastern Region Association of Municipal Electrical Utilities and Northland Municipal Electric Association.

"On the basis of past experience, we know that new developments of follow in the wake of new facilities which pass through virgin territory," said.

The one-day meeting, attended by 80 delegates, also heard Gordon Sta of Guelph, vice-president of the AMEU, speak about the recommended e tric water heater promotion program for the municipalities, while trend downtown street lighting were discussed by Don Grills of Canadian Gen Electric. A district report was given by H. L. Harris, of Sault Ste. Mari

Elected to the executive of the Northeastern Region AMEU were: G Marshall, West Ferris Hydro, president; Oscar Harris, North Bay Hydro, v president; Gerry Delany, Espanola Hydro, past president; Bev Stroud, tario Hydro, secretary-treasurer; Stan Smith, Sudbury Hydro, and Bob liams, Widdifield Hydro, directors.

## Safety – men at work!



*They put the emphasis on safety.*

Certificates of merit from the Electrical Utilities Safety Associati Ontario are received by the foremen of two North Bay area utilities c half of their crews. Presented by M. O. Sheppard, EUSA represen (centre), the certificates were accepted by Bud Glenn, West Ferris foreman (left) for three consecutive years without a lost-time injury by Ev Jenkins, Widdifield Township Hydro foreman, whose recently-fo utility went its first year without a lost-time injury.

In total, 119 certificates of merit went out this year to Ontario ut for accident-free records ranging from one to seven years.

## New northern project

Plans are in hand for a $26 million hydro-electric development on th sissagi River near Aubrey Falls, about 45 miles northwest of Elliot The new station will have a capacity of about 130,000 kilowatts — than double Sudbury's peak demands. It is due for completion in 196

Hydro Chairman George E. Gathercole says the project will preser natural beauty of the 100-foot high falls shown in photo. "The preser of this natural spectacle was one of the foremost considerations planners, who have worked closely with the provincial government



*eauty will be preserved.*

ts concerned. The design of the dam will provide for a flow of water the falls to retain the attraction for sightseers," he explains.
ie project will be located near highway 129, midway between Thessand Chapleau, and will provide construction work for about 450 men, of them to be hired locally. Aubrey Falls will be Hydro's third hydroric station on the Mississagi. □

## unicipal briefs

**Brampton Hydro** is going underground in a big way and is making sure everyone knows about it. In a large ad in the local newspaper, the utility announced overhead wiring was "Here Today", but "Not Tomorrow". It went on to ibe their underground program in the downtown Brampton area.

**orough PUC,** along with Ontario Hydro, seven lighting manufacturers local nursery, held a public demonstration last month to show what e done with outdoor garden lighting. Hydro lighting specialists were nd to answer questions.

**ic Heating** has been recommended for use in a new, 30-unit senior ns and public housing project, in Galt.

**ester Township** has joined a host of Ontario communities approving s making underground electrical service mandatory in new subns. As in most cases the decision followed a recommendation by the Hydro commission.

**Hanna,** retired manager of Listowel PUC, was honored recently with aterworks Hall of Service Award of the American Waterworks Associ-

**ry Hydro** has appointed Don Dowds to the position of engineering and ing supervisor. Mr. Dowds was formerly assistant manager of Ontario s Peterborough Area and president of the local Electric Service g.

**Kreason,** superintendent of Preston PUC for 45 years, has retired. At r held in his honor, the commission presented him with a gold watch ramed certificate, while the office staff gave him cuff links and a tie t perhaps his most cherished gift will be a white hard hat, autod by his staff.

**hop** has been appointed manager of Meaford PUC, succeeding Mel who is now with Streetsville PUC. For the past nine years, Mr. had been technical assistant to the manager of the Swansea Hydro- system, which merges with Toronto Hydro this January.

**ver Hydro** is providing estimates and information for the illumination centennial civic centre and investigating types of flood-lighting ent for residential use.

**ief** to the Lakehead Local Government Review Commission, Port as suggested merger with Fort William and the surrounding urban form one city at the Lakehead. Mayor Saul Laskin said the merger irect growth more effectively than the present system of divided, tive local jurisdictions. Port Arthur has 44.3 per cent of the Lakehead population in the planning area and 49.75 per cent of total taxable assessment.

**Fort William's report** to the same committee suggested the Lakehead municipalities become one regional unit subdivided into four districts, each retaining its own identity. Under this plan, the district municipalities would be autonomous in some respects but subservient in others to the federated or regional government.

**The Fort William Daily Times-Journal,** in an editorial, said: "What is making itself evident is strong public support for the merger of public utilities in all four municipalities under central direction and equally strong feeling that Port Arthur, Fort William, Neebing and Shuniah should retain their corporate identities."

**A. W. H. Tabor,** manager of the Fort William Hydro, was named first honorary president of the employees' social club at a recent meeting.

**A. C. McCay,** former assistant manager of Ontario Hydro's Brantford Area, has been appointed superintendent of Paris PUC. He replaces George Boucher, manager for 31 years prior to his retirement. Mr. McCay had been with Ontario Hydro for 20 years.

**Brampton Hydro** will convert to a new billing system at the end of August, Vernon Breen, manager, announced recently, under which both water and hydro bills will be included on one statement. He said the new procedure was a convenience to the customer and should be less costly.

**Kitchener PUC** has appointed Rudy Senyshen assistant manager. He will also continue as chief engineer.

**R. C. Braithwaite,** secretary of the Lynden Hydro System, died recently. Named Wentworth County's citizen of the year in 1963, Mr. Braithwaite was president of the Brantford Chapter of the United Handicapped Group of Ontario, secretary-treasurer of the Brant-Wentworth senior and minor softball leagues, past president and secretary of the Lynden Lions' Club and a Lions' zone chairman.

**The 80-year-old Boettger dam** on the Teeswater River, in Paisley, is in the limelight. The old dam and grist mill will be flood-lit each evening from July to September. Funds for the community-sponsored project have come from as far as Spokane, Washington. □

## OEL sets the standards



*Strong hands at the helm.*

With the merger of the 44-year-old Electric Service League of Ontario and the seven-year-old Electric Heating Association comes the new Ontario Electrical League, slated to become a standards-making body for Ontario's electrical industry.

"The OEL will concentrate on setting certain standards of quality and workmanship for the electric heating and wiring fields," says manager Bill Scott, of Ontario Hydro. "However, this certification program for products, equipment and installations, may extend into other fields in the future."

The merger agreement, filed under the Corporations Act of Ontario, named, left to right in the photograph, Gordon Marshal, Canadian Chromalox, president; Harry Foy, assistant manager and secretary-treasurer; Mr. Scott, manager; and Douglas Gordon, assistant general manager of marketing for Ontario Hydro, vice-president.

Another OEL objective is to co-ordinate the activities of interested indus-

try groups. Public awareness of standards will be maintained by the OEL in co-operation with the Advertising and Sales Co-ordinating Committee of the OMEA, AMEU and Ontario Hydro. To achieve these objectives, a work program has been formulated and an advisory council established together with seven main committees.

An electric heating standards committee will deal with such subjects as noise levels for air-conditioning equipment and heat pumps; revised National Warm Air Double Seal Standards; the CEA study on electric furnace performance and standards for home heating conversions. Red Seal, Medallion all-electric and Gold Medallion standards, along with service entrance equipment and wiring layouts will be handled by another committee.

Other work groups will deal with contractor certification and training, finance, electric heating servicing, Triple Seal and Medallion administration and publicity, and the program for the seventh Electric Heating Industry conference, to be held at the Inn On The Park, Toronto, on October 17.

Once policies recommended by the Advisory Council have been approved by the board of directors, assistance will be sought from industry for the actual implementation. □

## Shedding light on industry

Operation Aladdin, an intensive campaign by Ontario Hydro's Commercial and Industrial Sales Department, together with the Canadian Electrical Association and local utilities, is bound to shed light on some of the province's drabber buildings. The program will demonstrate the beauty and value of floodlighting industrial complexes and in each area visited members of the business community will be invited to hear the experts.

Beginning August 22, the program will run in Brantford until September 5 when the team moves to Sudbury for a two-week blitz. The Belleville-Trenton area will be handled from October 3 to October 15, while Port Arthur and Fort William will follow, October 24 to November 5. □

## Technically speaking

The Power Group of the Institute of Electrical and Electronics Engineers expects more than 2,000 delegates at the Special Technical Conference on Underground Distribution in Chicago from September 26 to 29. Technical sessions will include a panel on the past, present and future of underground distribution with contributions from 44 electrical utilities.

Papers will be presented on underground networks, underground distribution for high-rise buildings, conversion from overhead to underground facilities and the selection of transformer and secondary cable sizes. Fault location and underground installation practices will also be covered. Equipment will be reviewed and thermal performances of vault-installed transformers studied. □

## Stamp of approval




*Douglas Point, a dove and a microscope.*

Recognizing the work of Canadian scientists in developing peaceful uses of atomic energy, the Canada Post Office has issued this commemorative 5¢ stamp featuring the new Douglas Point Nuclear Power Station. Construction of the generating station, on the shores of Lake Huron near Kincardine, has been undertaken by Atomic Energy of Canada in co-operation with Ont Hydro.

Designed by Toronto artist A. L. Pollock, the stamp issue is in b Other inscriptions on the stamp include a microscope and a dove, syn lizing research and the peaceful uses of this great force.

## Grant in lieu of taxes

From time to time in the past, a number of municipalities have asked tario Hydro to advance part of its grant in lieu of taxes, and such requ have been allowed. Now, to maintain uniformity and more closely conf to the tax position of other property owners, Hydro has decided to adva each municipality an amount equal to half the grant in lieu of taxes pai the preceding year.

Payment will be made on or about June 30 of each year to all municip ties which at the time have not received the grant in lieu of taxes. In years by this date, only about five per cent of the grants payable have b billed so that the proposal will benefit nearly all municipalities to wh grants are made.

Adjustments will be made, if necessary, where Hydro's property ow ship in any municipality has been seriously altered.

## Assault by battery

Twenty-five battery-operated vehicles will visit 11 Canadian cities this to demonstrate to businessmen and farmers the value of this type of tr portation. The tour will show the silent effectiveness of everything personnel carriers and trucks with hoists to golf carts — all with recha able batteries representing desirable utility load.

One of the convoy's first stops will be at Hydro's A. W. Manby Se Centre in Metropolitan Toronto, for an evening display on September 7 the afternoon of September 8.

Eight major Canadian utilities, including Ontario Hydro, are spons the tour, which will be co-ordinated by the Canadian Electrical Associa the manufacturers and distributors of the vehicles and Cominco Ltd., o Canada's largest base metal producers. Other Ontario centres to be vi are London, October 25, and Hamilton on October 27.

## Heavy water plant for N.S.

A plant for the production of heavy water will be built by Canadian Ge Electric Company on the Cape Breton side of the Strait of Canso, in Scotia, it was announced in the House of Commons. An overriding fac favor of this site is the deuterium content of water to be used i manufacturing process.

It is understood that the Nova Scotia Power Commission will bu power station fuelled with oil — with provision for back-up with coal supply steam and electric power for the plant, which will be capable o viding at least 400 tons of heavy water a year. Production will begin i fall of 1969.

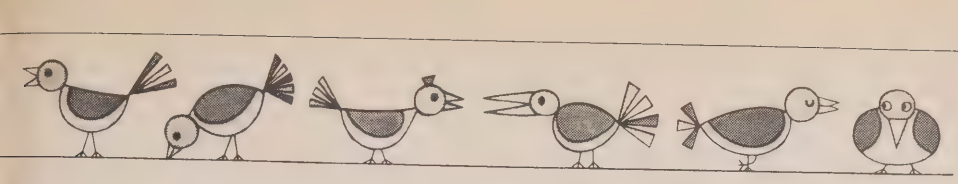
## May-June energy production

Primary energy provided by Ontario Hydro in May totalled 3.9 billion kilowatt-hours, an increase of 14.1 per cent over the san month a year ago. In June, the figure was 3.8 billion kilowatt-hour an increase of 12.7 per cent over the same month last year.

For the first six months of 1966, the total is 23.96 billion kilowa hours, up 11.1 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand in bo months was 4.05 billion kilowatt-hours, 4.4 per cent above t April figure.

The seasonally adjusted total for May represents 48.61 billi kilowatt-hours at annual rates. This is 349.4 per cent of the ener demand in 1949. Allowing for seasonal influences, the June ener demand projected at annual rates would result in an output of 48. billion kilowatt-hours, This is 349.1 per cent of the energy dema in 1949.



# off the wires

Rather alarming rumors have been reaching us
late to the effect that some people are actually
ading this page. Frankly, we had overlooked this
ssibility, considering it more as a private reposi-
ry for our more weird mental gyrations. Tucked
way at the back of the book as it is, we considered
safe from prying eyes. After all, those birdies at
e top were supposed to suggest who the page
as really for.

But a recent letter changed all that. It came
om a man in Northeastern Ontario who complained
at the page seemed preoccupied with sex — as,
deed, was the whole magazine — our OMEA
verage in particular.

Here was irrefutable evidence of readership.
y, we asked ourselves, was this man reading Off
e Wires? As it turned out, the poor chap had
ent six months marooned on an arctic ice flow
h nothing but a little blubber, several tea bags
d a copy of Hydro News.

This explained his concupiscence but did not
er the fact that he had deliberately chosen to
d Off the Wires. He could just as easily have
nt the time in conversational give and take with
seals and polar bears — couldn't he?

Thus encouraged, we launched a survey and
ne up with three more regular readers and a
t-time fan who looked over the page whenever
used a picture. Asked why they read Off the
es, each had a different reason.

ne, obviously embarrassed by our questioning,
it down to financial desperation. After devour-
all the interesting stuff up front, like the num-
of psigs it takes to fill one of those wogs at
Lakeview generating station, he'd turn to this
ion rather than buy a newspaper or other
azine.

ne second read it because the items were short
fitted in very nicely with his personal habits.
hought the page matched the aromatic atmos-
e of those quiet interludes all of us take dur-
the course of a day to set and think. On the
r hand, he didn't like the slick paper.

at brings us to Uncle Willie. We couldn't get
itor's permit in order to interview him but he'll
ut soon and should be able to offer other good
ons for reading Off the Wires.

any event, with the nucleus of a strong
r's group firmly established, it behooves us to
our ways. On the occasion of Hydro's 60th
ersary, then, and for Uncle Willie's sake, we
enceforth view things in a more serious light
ndeavour to bring erudition and profundity to
bservations.

And so, what's new as we leap into the space
Plastic buggies for one thing. Never really
on the horseless carriage, the Mennonite
rs of Ontario are throwing caution to the
and snapping up plastic carriages for their
s with unheard of exuberance. Half a dozen of
ew-fangled contraptions have already been
y the two Mennonite entrepreneurs who intro-
the rigs to Ontario. Cautiously optimis-
ey see a growing market for their $500
t but won't predict a Henry Ford in reverse.

Still, isn't that just about what the Model T cost when old Nellie was put out to pasture?

. . . Not so profound as we would like, that bit about the buggies, but it's fraught with social significance and so squeeks by our new stringent standards of pedantry. Let's look to the future now, and endeavor to determine how electricity may be expected to contribute to a better way of life. Some say there are projects underway of such significance that they will transform our entire pattern of living and render today's society obsolete in almost every way within a few years.

Take the work going on at the Massachusetts Institute of Technology. Within three years, according to Professor M. L. Minsky of the institute, they will produce a robot capable of winning at checkers.

What's so wonderful about that — the shallow thinker will ask? If checker players all over the world could turn their boards over to robots and put in an extra hour or so on the production lines, we can foresee a 10 per cent rise in the gross international product.

But the MIT breakthrough is only a start. If they can do away with checkers, including the Chinese variety, then parcheesi, snakes and ladders, crokinole and tiddledywinks are sure to follow. How the old GIP will soar then.

. . . What else is meaningful? People strolling down Toronto's Yonge Street these days miss the implications of the go-go girl going through her routine in one of the tavern windows. To the best of our knowledge, this mechanical maiden is the first all-electric go-go girl anywhere.

Here's social change at its most significant. Females, as we know them, may be on the way out. Again, don't knock it without a little thought. Plug-in wives may not appeal to the romance in our souls, but are there advantages?

One that comes to mind is the courtroom bottleneck. Crimes of passion being eliminated, our magistrates would be free to deal with more important matters such as traffic violations and the drunk and disorderly. Offices would function more smoothly, if more dully, and the world of commerce and industry suffer no insurmountable set-back.

But what about the home. Here we can see complications as well as advantages. Snoring, nagging and complaining would be a thing of the past. Even without a Cascade 40 there'd be plenty of hot water, but electrical utilities would not suffer. In fact, demand charts would soar and off-peak wives would be the rule.

Household chores would be no problem with Kilowatt Katty on the job and the milkman could stay as long as he liked. What about the complications? Well, we can think of a few but this is no place to discuss them.

. . . In what direction are our scientists casting to meet the challenge of our brave new world? To Mother Nature, according to one recent newspaper account, and a new science called bionics which seeks to apply nature's techniques to human technology. Plants and animals have been making use of electricity since time immemorial, the article points out, noting that a growing bean plant sends out currents to its bottom-most roots where cells are most actively dividing. About 100 billion bean roots would be needed to light a 100-watt bulb.

As for electronics, they go on, bats developed the sonar technique millions of years ago. Now scientists are studying the bats in hopes of learning enough to keep them away from houses by jamming their sonar.

Chalk up two more refinements we can look forward to as the future unfolds — bean power lighting and bat-jamming sonar.

Medicine is another field likely to undergo a metamorphosis and while we are not competent to assess the full potential of electricity in this role, some mention should be made in a treatise such as this.

Harking back to the columns of "Toronto Illustrated" of 1893, we find that electricity, even then, was contributing substantially to the relief of human misery. With reference to a certain Mr. Dorenwend, the item says:

"This gentleman, who is a native of Canada and still on the sunny side of 30, has gained a world-wide reputation as an electrician, and is the inventor of many electrical appliances, chief among the latter being his electric belt and truss, which is now extensively used in all parts of the civilized world."

What, precisely, would it cure? According to Toronto Illustrated, quite a bit:

"The Dorenwend body battery, belt and truss," the article relates, "is especially adapted for the relief and cure of all weaknesses and diseases of the stomach, liver, brain, lungs, throat, kidneys, bowels, spine, heart, urinary organs, muscular and venous systems and are applicable to both male and female."

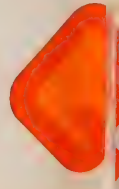
That doesn't leave very much to worry about but presumably we have been able to develop more sophisticated ailments in the interim. Only recently, electricity was put to work halting a chronic case of sneezing. A five-month sneezing spree, during which a 17-year-old Miami girl sneezed as often as once every five seconds, was ended with the use of electric shock treatment. Impulses from an electronic machine helped her to "adjust her cerebral irritability", according to the attending physician.

. . . Other human weaknesses overcome with the aid of electricity, and described in these columns from time to time, have included gambling, drinking and the lack of love of one's fellow man.

. . . The future, then, is a shining one as we see it. Try to envision a world free of vices and diseases (including the common sneeze), with everyone dashing about in plastic buggies and full of love for his fellows. Picture further, if you will, a society in which the houses are bat-free, parcheesi has been banished and the ladies' resistance is only equal to voltage over amperage.

And if it does come about, electricity will be instrumental. We'll run the whole thing on an acre of beans.

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# ontario hydro news

## september/1966

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THE COVER

This is the way nuclear fuel looks when viewed with an optical comparator. The instrument is among the equipment at AECL's new nuclear power research and development centre outside Toronto. With it, minute wear on the fuel can be detected and measured. Commissioner Ian McRae introduces our nuclear-electric review section, written by Norm Panzica, staff writer.

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Nuclear-electric power will play a vital
in Ontario's future and may well become
principal means of generation.

Our most recent forecast calls for one 5
000-kilowatt nuclear unit to be placed in
vice each year from 1970 to 1975 inclus
After that the rate is likely to accelerate.
1980, nuclear power should account for
third of our total predicted resources of n
than 23 million kilowatts.

Will this share be restricted to one-thir
we move towards the year 2,000? With pc
demands doubling every 10 to 12 yea
doubt it.

True, we must employ every economic
watt of hydro-electric power if we are to
the basic concept of the Hydro enterpris
to provide power at the lowest possible
But the amount of future hydro-ele
development will depend on nature, on
ability to upgrade existing stations, on
increasing cost of construction and on t
mission economies. Indeed, with constant
reductions in nuclear generation, new hy
electric sites may well become less attra
than they are now.

After all, it is the cost of delivered er
that counts and we are already beginnir
build and utilize hydro-electric plants prim
for peaking purposes.

Coal-fired generation will always be
us. Unlike nuclear power stations, coal p
need not operate continuously; they can b
started more quickly and more economi
But nuclear power will outstrip coal. It h

As I see it, the cost of electricity from
simply will not be able to match the ulti
economics of nuclear generation. The cr
four mills a kilowatt-hour (the cost at v
nuclear energy presently becomes compet
should be bettered at the Pickering nu
station now under construction near To

Newly appointed Ontario Hydro Commissioner Ian F. McRae is a well-informed proponent of the Canadian system of producing electric power from the atom. We asked him to introduce our special section on nuclear-electric developments with an appraisal of the future. He emphasizes that he is expressing his own personal views.

# the atom in our future

upital costs of nuclear stations will be de-easing, and as we build new plants and gain perience, further reductions in operating sts will be realized. Together, these will re than compensate for any increase in the sic price of uranium.

Coal prices are equally sure to rise. While e very existence of nuclear power has had tabilizing effect, coal price increases would d more to the cost of power than any pro-ted rise in the price of uranium.

Canada's natural uranium system is ex-mely economical in the use of uranium. It ds only 102 tons of uranium oxide to make ) tons of fuel; other nuclear power systems uire from 138 to 193 tons. In fact, the NDU (Canadian Deuterium Uranium) sys-n holds out the best hope of major cost ings, not only relative to other reactors but to other forms of generation.

Canada will soon make its own heavy water, l costs for this commodity will fall. Foreign hange is expensive. Most of our coal of essity comes from the U.S. while federal ventions on Nova Scotia coal add com-kity and uncertainty to a fuel supply largely endent on foreign vendors. But Canada s have plenty of natural uranium.

Another attractive feature of the CANDU em is its flexibility, allowing various types uel to be tried out without shutting down reactor or interrupting the power output e station.

he ability of CANDU reactors to use a mix-u of natural uranium and thorium also es them highly desirable to many nations. easily obtainable material, thorium makes en amount of uranium go much farther.

ther nuclear-electric systems require en-ed uranium. At present, the U.S. is the cipal (and possibly the only) source of ly in the Western World of this fuel, the production of which is an economic impossibility for most countries.

Canada's estimated eight to nine million kilowatts of nuclear-electric generation by 1980 (mostly in Ontario) represents less than five per cent of the expected world total — a hopeful challenge to our industry.

Finland, for example, imports 90 per cent of her energy needs. Spain, Yugoslavia, India, Pakistan and others have expressed determination to use their own natural uranium and thorium. Pakistan, recent purchaser of a Canadian heavy water reactor, presents rich potential: her per capita annual consumption of electricity was 34 kilowatt-hours in 1963, when Canada's topped 6,400.

Canada has the ability and the technology to supply this export market with power plants. And let us keep in mind that Ontario Hydro's customers (Ontario industry) produce half of Canada's manufactured goods, so it's good business for all concerned.

At present, the CANDU system is undergoing two major changes promising substantial economies in the capital cost of the plant. One involves a vertical reactor using only one fuelling machine instead of two, while retaining the economies of refuelling without shutdown.

The other change is the use of ordinary water to carry heat from reactor to the boiler, reducing by one-eighth the amount of heavy water needed, and effecting other economies.

Among the basic and dramatic innovations of the future are controlled fusion and the direct conversion of nuclear power to electricity. But ever-increasing power demands cannot be put off awaiting new developments.

Apart from other progress, the time is not far off, I think, when Ontario Hydro will buy completely engineered and manufactured reactors ready for operation. Today we buy components from several hundred suppliers; tomorrow we will order reactors as we now buy coal-fired boilers — completely installed and ready to go.

With great confidence in the research capability of our government agencies; in the skills of private industry; our own Ontario Hydro engineering, research and operating staff; and in co-operation and close association with the municipal utilities, we look to a rewarding future.

As industrial Ontario continues its spectacular growth and the citizens of our province look for more of the good things of life brought to them through the medium of electricity, power demands will continue to rise and customers will continue to expect an abundance of low cost electricity. In meeting these realities, we at Hydro are simply doing our job. Nuclear power is one of the very important "keys" to the fulfilment of that duty. □



## Ian F. McRae

*Appointed a commissioner of Ontario Hydro last February, Ian F. McRae has had a long and intimate association with the nuclear-electric manufacturing industry.*

*A professional engineer, Mr. McRae was with the Canadian General Electric Company for nearly 40 years. He organized its Civilian Atomic Power Department in 1955 and remained as its general manager until last year. He was elected a director of the company in 1957 and became chairman of the board the following year.*

*President of the Canadian Nuclear Association for its first five years, Mr. McRae has attended several international conferences on nuclear energy in various parts of the world. One of his last acts with Canadian General Electric was the completion of negotiations with Pakistan for a 137,000-kilowatt nuclear-electric plant — one of Canada's largest single export orders for manufactured goods.*



# douglas point and pickering

**coal piles and chimneys are nowhere in evidence at these thermal-electric plants**

Even before the first puff of nuclear-generated steam hits the turbine, the Douglas Point nuclear power project on Lake Huron will have contributed much to the way of doing things in this important new field.

For one thing, it has proved that the capital cost of nuclear stations can be accurately predicted. The 200,000-kilowatt plant is due to produce first power later this year and is still within the $81.5 million capital cost estimate.

Capital costs are important since they greatly affect the cost of power. But with Douglas Point falling well within predicted limits, Hydro's confidence in the much larger, $266 million nuclear power station it is building at Pickering is fully justified.

According to Ken Elston, supervisor of Hydro's Central Nuclear Operations, Douglas Point has also shown the necessity for detailed planning in design, construction, commissioning and operation.

"We now know where more detailed planning is needed to meet our power production schedules," he says.

Douglas Point will work. That has already been established by its predecessor, the 20,000-kilowatt Nuclear Power Demonstration Plant at Rolphton. Since NPD started operation in 1962, it has consistently shown its ability to produce power efficiently and for prolonged periods.

Experience gained in building NPD provided the know-how for Douglas Point, a scaled-up and otherwise improved version of the same CANDU design. Work began at Douglas Point in 1960 on a 2,300-acre site between Kincardine and Port Elgin.

As a full-scale production unit, Douglas Point has greater fuel economy than NPD, and a relatively smaller operating and maintenance staff.

Drawing on experience at NPD, the fuelling machine rooms at Douglas Point have been separated from the reactor vault, making them accessible during shut-down.

Douglas Point is also self-contained. It can upgrade any heavy water spoiled by contact with ordinary water — a significant factor. Sending this $20-a-pound substance out for upgrading adds to cost.

Hydro will buy the Douglas Point station at a price that will make the cost of electricity comparable with that produced from a 200,000 or 300,000-kilowatt coal-fired unit. The exact price hasn't been set, but Hydro will operate the plant from the start. At the moment, about 150 Hydro men are at the plant for commissioning procedures and t testing before start-up. Normal staff com ment will be 91.

And lessons learned at Douglas Point ar turn, simplifying design and construction o 1,080,000-kilowatt, two-unit Pickering sta near Toronto.

Generally speaking, the larger the unit, lower the cost of the power it produces. N capital cost per kilowatt of $1,650 will c pare with about $410 at Douglas Point around $250 at Pickering, set favorably Ontario's greatest load centres.

Although Hydro will operate all three pl its changing involvement reflects its gro nuclear ability. Built by Atomic Energ Canada, Ontario Hydro and Canadian Ge Electric Company, NPD is owned jointl AECL and Ontario Hydro. Douglas P owned by AECL, has Hydro as principal tractor. Pickering, to be built, owned operated by Ontario Hydro, involves AEC nuclear design consultants on a straight mercial basis.

Since it is not Hydro's responsibilit develop new industries — although it is he to do just that — the overriding consider must always be mills per kilowatt-hour. accounts for the unusual financial arrange for Pickering. Hydro is paying $120 millic about the cost of a coal-fired station of parable capacity — and the provincial federal governments are providing the bal They are accepting whatever economic may exist for the protection of power use

If Pickering produces electricity at the dicted cost — and Douglas Point suggest it will — the two governments will get money back with interest.

Pickering's 500-acre site, four miles ea Metropolitan Toronto, is ideal for a nuclear-electric station. Unlimited suppli water are available from Lake Ontario ar

## be our guests

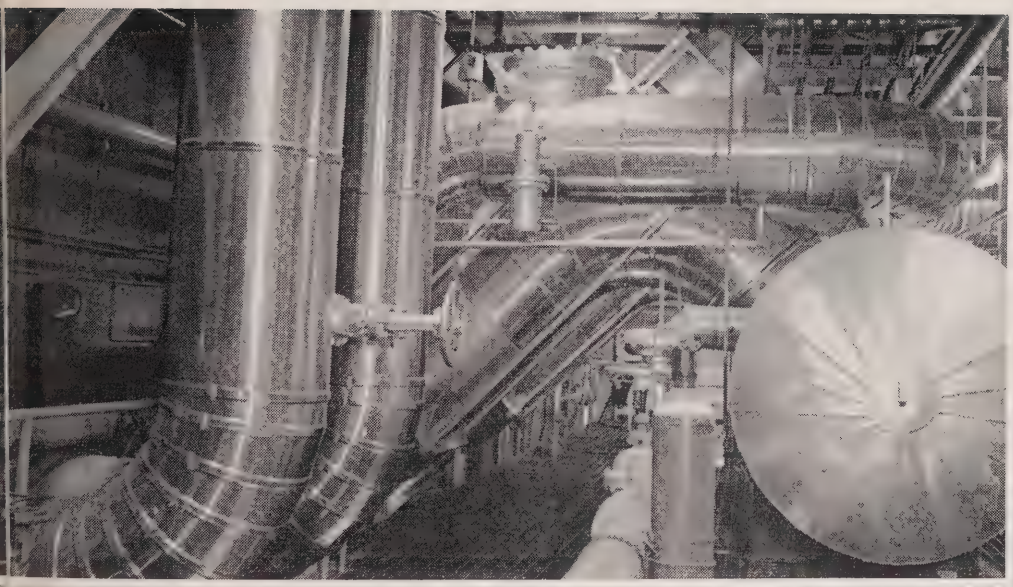
Visitors to the Pickering nuclear-electric station will witness the colorful story of the productive uses of nuclear energy through a variety of media at an information centre on the station grounds.

Overlooking the construction site, the centre will feature 4,000 square feet of display area. Models, diagrams, photographs and actual samples will trace the story of the hard-working atom from the discovery of X-rays in 1895 to the present state of development of the Canadian nuclear-electric program.

A section on radioactive elements will show their use in medicine, agriculture and industry. Visitors — about 90,000 a year are expected — will be able to measure the activity of radium-dial wrist watches with a detector.

The centre will also contain a 150-seat auditorium equipped for film showings. □

*Gleaming steam lines at Douglas Point serve the plant's single turbine generator. Technicians are shown checking stainless-steel-lined storage bay for spent fuel at Douglas Point. Tank will hold 40 year's residue. At Pickering, four-foot-thick concrete walls rise 10 feet at a pour. Workmen are preparing reinforcing steel. Opposite page: end fittings on Douglas Point reactor are checked.*







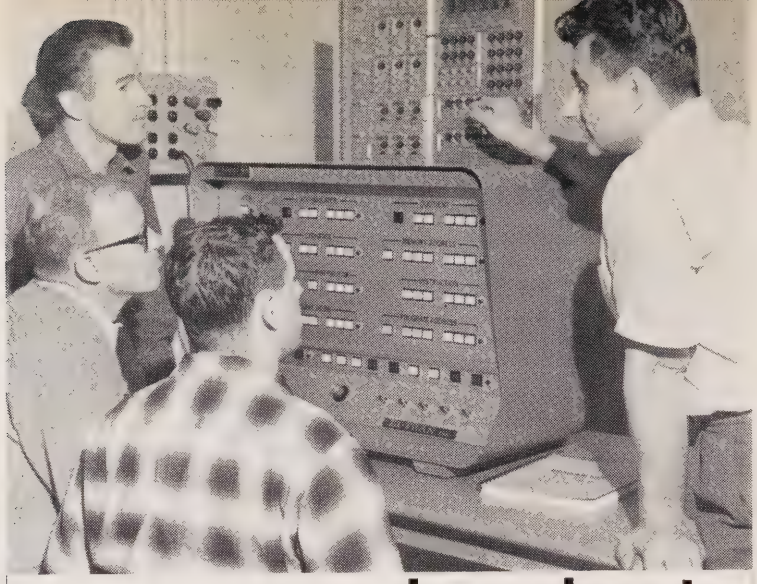
full load, the station's two units will require up to 600,000 gallons a minute for cooling purposes. Tests have proved the site capable of bearing the tremendous weight of powerhouse and reactor buildings.

With the four-foot thick walls of the first reactor building almost completed, the job is on schedule. Seven hundred men are working at the site, although this number will eventually be doubled. They will pour more than 150,000 cubic yards of concrete and erect about 12,000 tons of structural steel before they leave.

Among the essential differences in outside appearance between Pickering and Ontario's present large thermal-electric power stations will be the absence of large coal piles. Each of Pickering's two reactors will hold a mere 116 tons of uranium dioxide fuel — the equivalent of nearly 2.5 million tons of coal. More than half will be replaced each year.

Instead of the costly problem of disposing of tons of fly ash, spent fuel will be simply stored in a water-filled tank on the site.

Such is the promise of Pickering. And Pickering is promised for 1970. □



# learning to operate

**training in plant operation is a vital part of Canada's nuclear story and most of it has fallen to Hydro**

Dusky men from India and Pakistan hardly rate a second glance in the Ottawa Valley these days and their graceful wives in colorful saris earn only the appreciative looks accorded any pretty lady.

On the bus from Rolphton to Deep River and Pembroke, a 20-year-old Torontonian may be seen comparing notes with a French Canadian classmate or a Pakistani. Not students of a new university, these men with the widely varying backgrounds are being trained by Ontario Hydro to run Canada's nuclear power plants — both those underway and planned for this country and those being sold abroad.

The field, in Ontario at least, is so advanced that make-shift, crash expedients are a thing of the past. Time and facilities now exist to permit a long-range program of staff training and even high school graduates can carve out a rewarding career in nuclear-electric generation. A growing corps of experienced men make the long-range approach possible; the future prominence of nuclear power makes it imperative.

Training in the operation of nuclear plants is vital even for professional engineers. While almost any engineering specialty, from physics to chemistry, has a place in the production of nuclear-electric power, no university can turn out graduates able to step into a job at these plants fresh from the halls of learning.

As the operator of Canada's first nuclear-electric plant (NPD), and the first Canadian utility to commence building its own nuclear station (at Pickering, near Toronto), Ontario Hydro also provides this specialized training for others to the degree that Hydro's own needs allow.

The training program is an integral part of Canada's nuclear story, which began during last World War with the building of a natu uranium, heavy water reactor at the Ch River research establishment. Other reac were added later.

Early in 1954, a team of engineers scientists met at Chalk River to investigate feasibility of building a small reactor to p duce electric power. Their findings resulte the $33 million Nuclear Power Demonstra plant at Rolphton, about 16 miles downstr from the research centre.

NPD, which is jointly owned by Ato Energy of Canada and Hydro, started u 1962 and has been feeding power into Hydro grid since that time. It became prototype for the 200,000-kilowatt nuc power station now nearing completion Douglas Point, on the eastern shore of I Huron.

"Obviously, in the mid-fifties, there wer nuclear-electric experts as such," says L McConnell, Hydro's nuclear operations e neer. "So we gathered together several with 15 to 20 years' experience in related fi We pooled their knowledge of reactors, the generation, mechanical engineering and sc to get started in the nuclear field."

At the close of the fifties, with NPD u construction and Douglas Point on the dra boards, men of slightly less experience c along — men who could take senior jobs some training and a period at NPD.

"Now the business is well launched," McConnell adds. "Now we can, and must, a long-range view of staff needs, and hire without degrees as well as engineers. In a we've come full circle. Many of our pe were trained elsewhere and now our men attractive to other organizations."

Sales of Canadian reactors abroad add t burden of training. When an overseas co buys a CANDU-type reactor, the principal C

*Pakistanis troop across the yard from Hydro's Nuclear Training Centre to the NPD plant. Instruction includes use and handling of protective clothing.*
*Opposite page: Tad Ozcko lifts circuit board from digital logic trainer for three students.*

n agency involved — AECL or the Depart-nt of External Affairs — asks Hydro to train foreign personnel. Hydro is reimbursed by utility buying the plant, which, in turn, is quently assisted by the federal External Aid ce. Each such request is decided individu-.

Whether from Renfrew or Rajasthan, the nee at Hydro's Nuclear Training Centre classroom, laboratory and practical in-ction. Present students include Hydro loyees, Indians, Pakistanis and a team from Iro-Quebec.

he centre is an unimposing 12,000-square-, single-storey structure set a few hundred from NPD.

mong its features are five laboratories, not f which are completed, where operating s are developed. A full-scale computer for tor control simulation is planned for next ; meanwhile, trainees use a digital logic er, the circuits of which can be changed e students themselves.

he students tackle the fundamentals of ce, station systems and equipment, and all s of protection training including first aid fire safety. Their studies range from ral theory to the operation of a specific n.

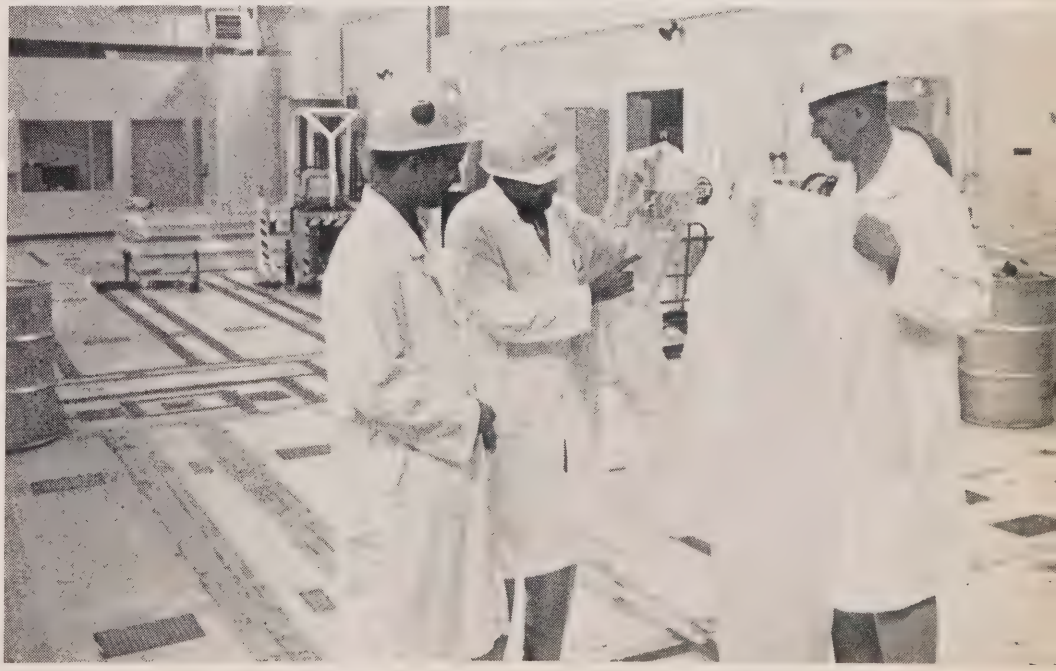
n the old days," says George Howey, who s the centre, "the operator operated and ew man watched. This isn't practical any . Today, he needs extensive training be-you can even let him in to watch.

e can't always duplicate exactly, of e, but we do come close. And a man d properly on a sedan won't have much le with a station wagon."

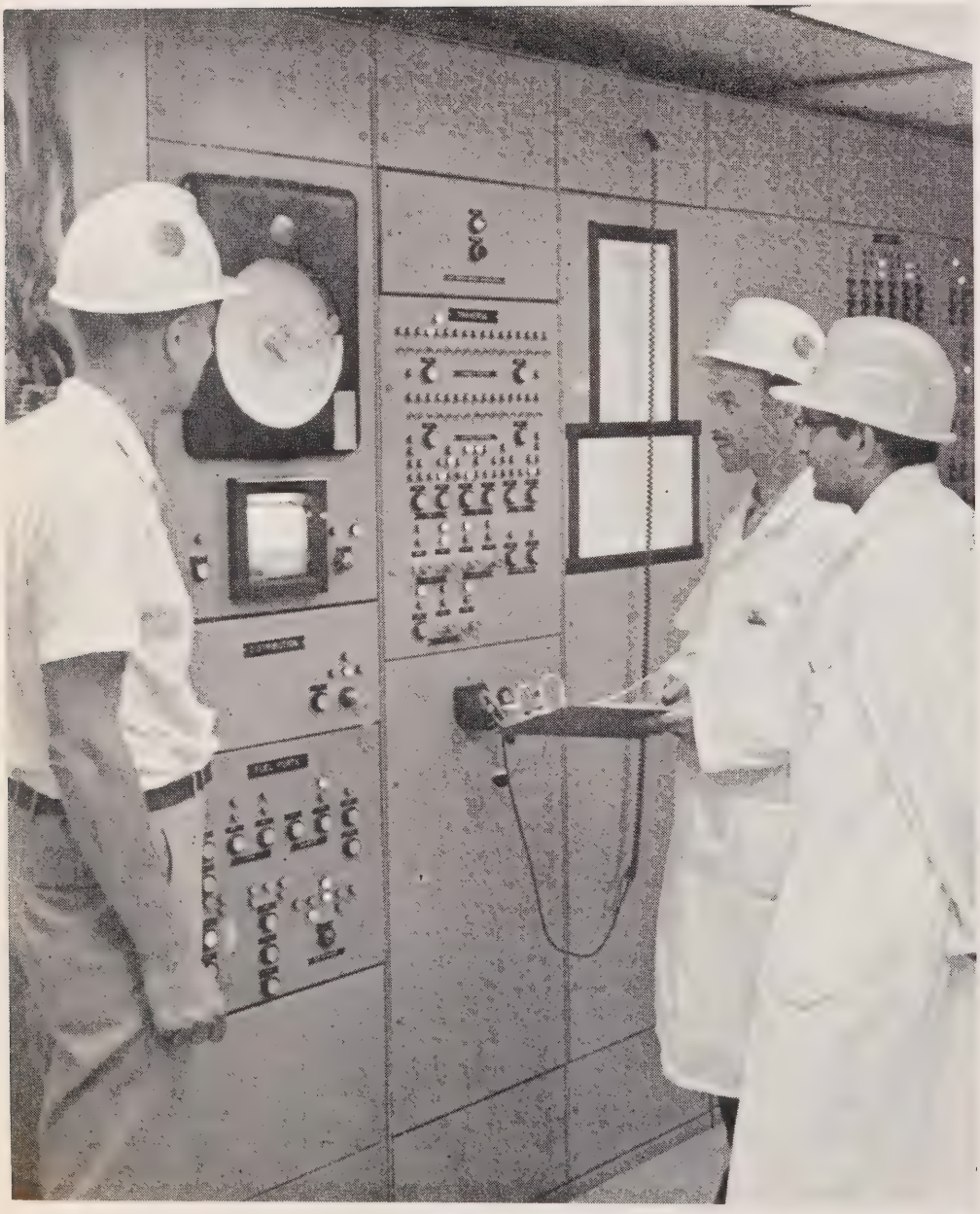
e labs serve another major purpose. In-ors set up malfunctions so that, if they do on the job, the man will have met them e.

t the most important classroom is NPD





*The station itself is the most important training tool in nuclear power plant operation. Men from Karachi, Pakistan, are shown learning to read complex array of dials and charts in the control room of the NPD station. Opposite page: repairs in NPD restricted zone call for a plastic suit against radiation. Circulating fresh air causes suit to inflate.*



itself. Trainees spend much of their time the both for formal instruction and to gain practi experience.

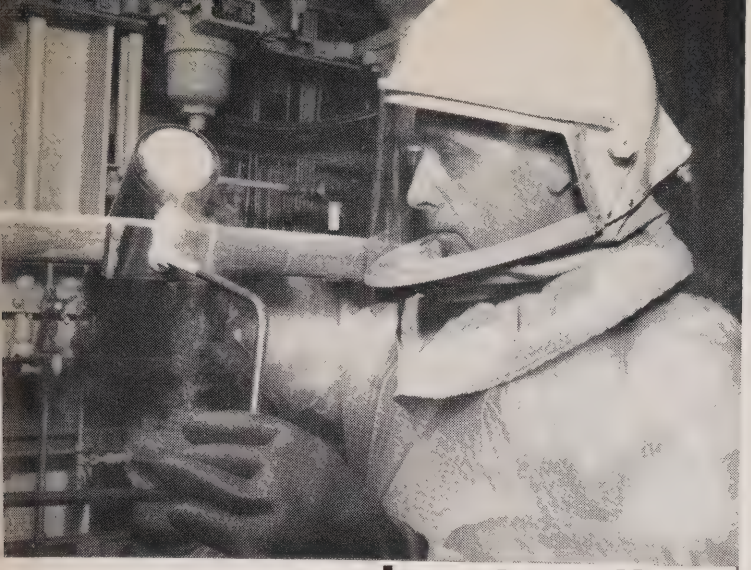
As a demonstration plant, NPD fills a spe need. Its reliable output proves that the CAN system works, but often Hydro can wait the 20,000 kilowatts it contributes to system.

"Suppose there's a repair or maintena chore at NPD," says Mr. Howey. "No classro can duplicate all of these contingencies and a major plant, there wouldn't be time to beginners tackle the job. But at NPD we let a crew do the work as a lesson since Hy can do without its small output when syst needs permit. Sometimes we do it two or th times with different crews."

The training curricula are different for p fessional and non-professional trainees but plan is such that even a high school stuc can rise to the responsible position of s supervisor. Station superintendents are n mally university graduates.

Apart from written and oral tests, all trai undergo practical tests and are graded on s qualities as initiative, judgment and abilit communicate.

Hydro's Nuclear Training Centre is p viding a specialized education for tomorro nuclear technicians, it is helping another p ince's entry into the nuclear field, and i contributing towards the technological economic independence of other countrie is, in fact, doing much for Canada's in national reputation for proficiency and lea ship.



# understanding radiation

Fear still casts a faint shadow over public acceptance of nuclear radiation, even though controlled radiation plays a vital role in the production of nuclear-electric power. The presence of fear undoubtedly can be traced back to the final days of World War II — fought to a close in a nuclear holocaust.

Yet radiation has much in common with electricity. Each is energy and both can kill. Properly used, they can be harnessed with absolute safety to the ultimate good of mankind.

In its early days, electric power was equally misunderstood. With the introduction of alternating current, billboards reminded people that A.C. was used to electrocute criminals. Voices in New York and Buffalo thundered against those who dared employ this dangerous force in their homes.

What, then, is radiation?

Early this century, scientists discovered that certain unstable elements spontaneously change themselves into others, emitting rays and particles of matter in the process. A pound of uranium, for example, will change half of itself into lead — in about 700 million years.

Men continued to speculate about the power hidden in particles too small for the imagination to grasp, and what could be done if it were harnessed. But not until 1942 did they achieve a controlled chain reaction.

What happens in a reactor is that the neutron particles normally emitted by uranium are slowed from around the pace of light to a mere one or two miles a second. At this speed they split other uranium atoms more frequently and free more neutrons which split more atoms, and so on. Canadian nuclear plants use heavy water for moderating the speed of neutrons.

Each collision releases energy in the form of heat, which is then converted into electric power by the conventional method of turning water into steam and using the steam to drive a turbine-generator.

People working near reactors are protected by concrete from the harmful effects of radiation. Two other kinds of particles, alpha and beta, can be stopped respectively by the cover of this magazine or a quarter-inch thick sheet of plywood.

Gamma rays, however, are by far the most penetrating form of nuclear radiation. Essentially identical to X-rays, these are not particles but belong to the wavebands which include light and radio waves.

The sun radiates virtually the whole spectrum, heat and visible light being only a narrow slice, and man has always experienced some radiation. It comes from the sun, from the stars and from elements in the earth that pre-date him by eons.

So the question isn't whether we have radiation, but how much? Obviously the human body can tolerate small amounts, since it always has.

The safeguards are shielding, shortness of time, and distance.

Shielding will block and absorb nuclear radiation, reducing it to acceptable levels. It's rather like drawing the curtains for an afternoon nap: the very weak light that gets in won't prevent sleep (the atmosphere acts as a shield against cosmic radiation, which usually increases in intensity as one climbs above sea level).

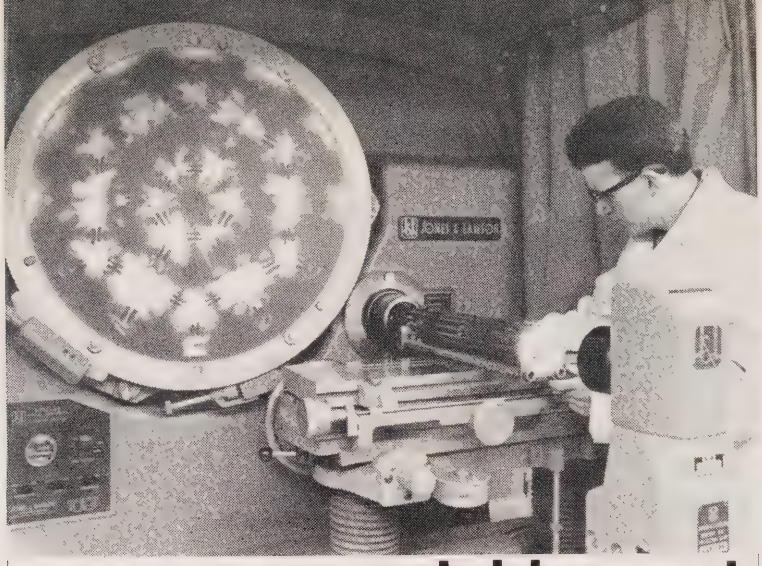
Brevity is protection employed, for example, when we limit the duration of sun baths or medical X-rays to the necessary minimum.

Then there's distance. A 150-watt bulb is plenty for reading, but not if it's a block away. Similarly, nuclear radiation falls off so fast that the level 10 feet from a source is one-hundredth of the level at one foot.

What of the people outside a nuclear power station? Meticulous measurement by various authorities since the Nuclear Power Demonstration plant opened at Rolphton, in 1962, shows that the radiation level around NPD is no higher than before. In fact, the level in its parking lot is less than half that of most Canadian cities.

Most of the things that serve us can also harm, whether it be medicines or machines, canned food or cars. Avoiding them all is unthinkable.

How much radiation? Few things in our environment are under such constant, exhaustive scrutiny to ensure that, like electricity, it is a safe and reliable servant. □



# picking out the bugs

**nuclear power station technology takes a big step forward as AECL personnel move into new headquarters in research community of Sheridan Park**

Furrowed brows, crumpled balls of paper and countless cups of coffee are as much a part of Canada's nuclear-electric program as natural uranium.

Nuclear technology holds the best hope of significant reductions in the cost of power, but it's a long road from research to kilowatts and much depends on the inventiveness and skill of the men who do the groundwork.

In Canada, the governmental design, development and testing of equipment for nuclear power plants is centred at the new Ontario Research Community of Sheridan Park, near Toronto, and specifically on the 17 acres occupied by Atomic Energy of Canada Limited.

Most of AECL's Toronto staff moved to Sheridan from rented quarters at Hydro's A. W. Manby Service Centre this summer. They are in two major groups: Power Projects, comprising more than 500 men, and Prototype Design and Engineering, with about 100.

The move began in April and was completed in August. Among AECL's neighbors are the Ontario Research Foundation and the research teams of several major industrial corporations.

"We are at the frontiers of techniques," says AECL vice-president Dr. W. B. Lewis, "and the frontiers keep moving out. At our Chalk River laboratories we work on the basics, but detailed design always brings unexpected problems. And at Sheridan Park, of course, our development people are reasonably close to industry."

Sheridan Park's nuclear teams — they include about 30 Ontario Hydro employees — will work with full-size mock-ups of reactor vessels.

"The main problem," says Arch Tait, in charge of the development laboratories, "is that a machine simply doesn't behave as you expect. And you can never predict quite what it will do when it's connected to another machine."

With fuelling machines, for example, a full-size prototype is made and the "bugs" worked out in operation under simulated reactor conditions. Trouble is, the revised machine usually presents some new bugs of its own.

Reactor conditions are created by forcing steam and hot water under pressure through steel pipe configurations called test loops.

Since there's no nuclear fission at the new quarters, the required temperatures will be provided by three sets of electric heaters in the 200 to 300-kilowatt range. (These heaters, incidentally, will help to bring this atom-age customer of Toronto Township Hydro to an eventual winter peak of more than 6,000 kilowatts.)

The test loops form the heart of the 60,000-square foot development lab, and occupy a 50-foot-high bay running the length of the building. In winter, they will help to heat the cavernous structure. Other test equipment is located in a 100-foot-high section at the front of the building.

Attached to the main laboratory is a one-storey ancillary lab and office building, while across a wide lawn is a three-storey engineering design office with 130,000-square-feet of accommodation. All buildings are steel-framed and clad in aluminum.

Also under development at Sheridan Park is a system which will use natural uranium fuel and heavy water moderator but, instead of heavy water transferring heat from the reactor to a steam generator, steam will be generated directly from ordinary water taking heat from the fuel. A 250,000-kilowatt prototype power plant utilizing this principle is planned for Quebec. The reactor will be known as a CANDU-BLW (Canadian Deuterium Uranium-Boili Light Water).

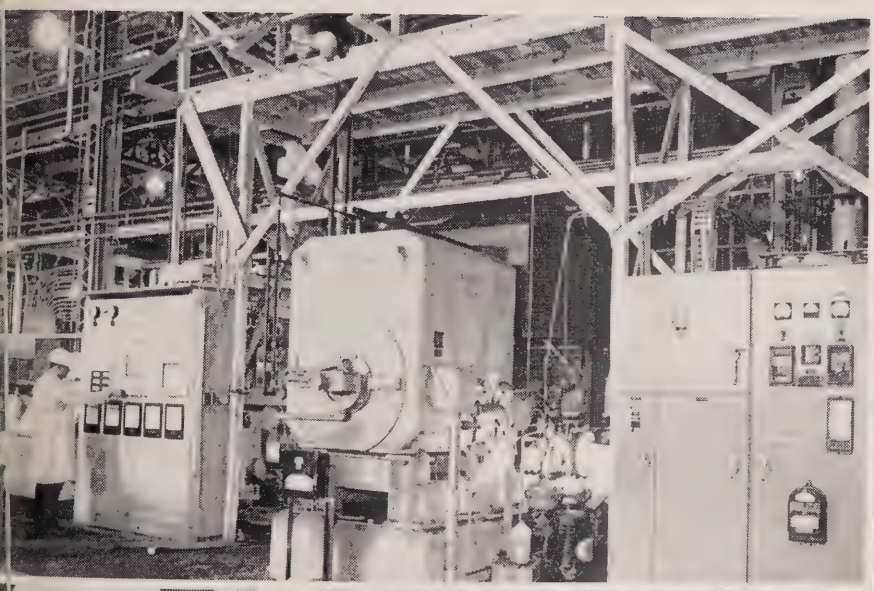
"With similar-size units, it will probab produce power more cheaply than the CAN type now in use," says Dr. Lewis. "But, course, we are much less confident about BI cost estimates for the very good reason th only actual operating experience will tell t story.

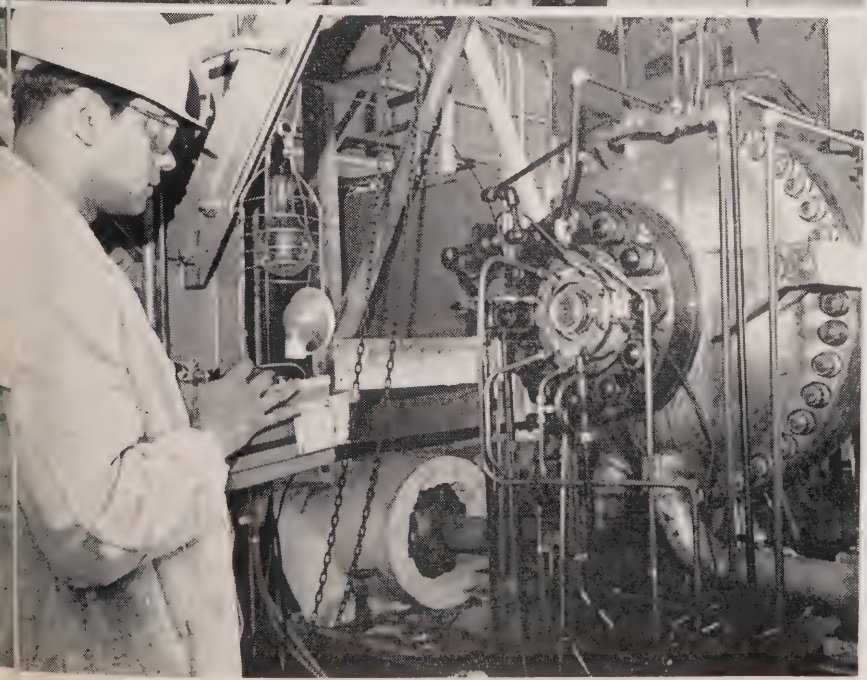
"However, power demands just won't w . . . if we held off for the perfect machine any field, there would be no progress.

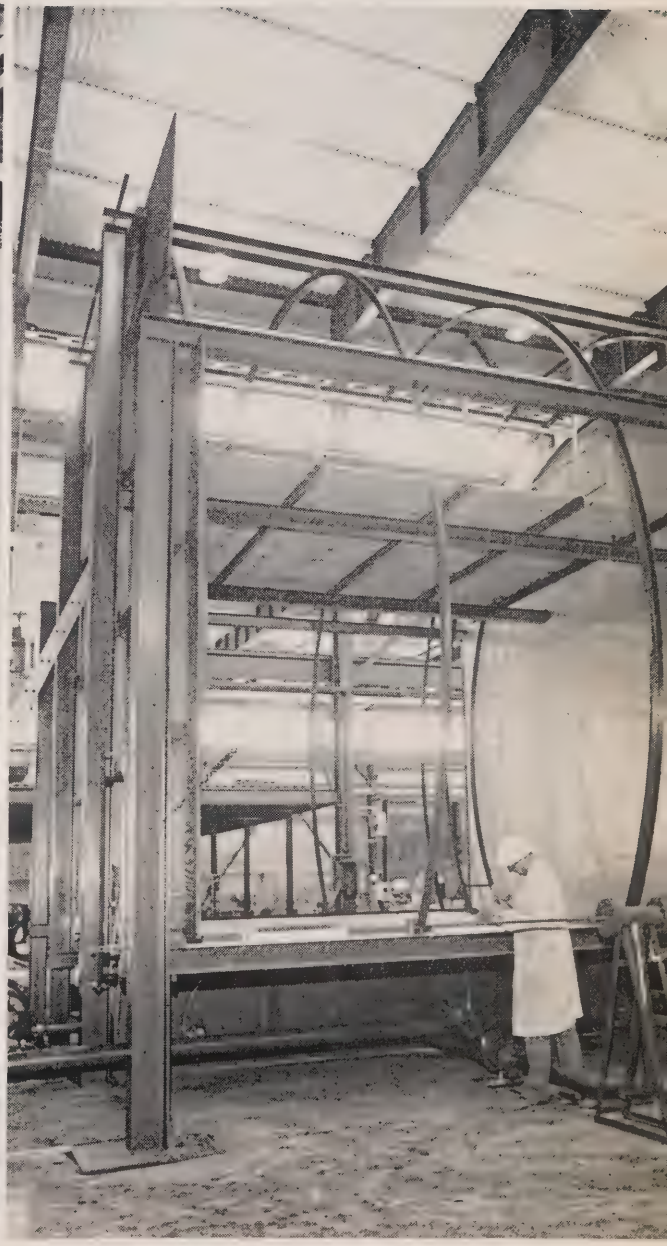
"It is," says Dr. Lewis, "entirely possil that significant and cost-saving changes may incorporated in any future units at the Pick ing station. This is all part of the job of dev opment and testing. We often think we kn what to anticipate but the unexpected must met and mastered."

At Sheridan Park, they can't go by p cedent. They're plowing new ground a picking out the stones as they go along.

*These photos show some of equipment used in nuclear power research and development at AECL's new Sheridan Park centre. Steel hoops represent early stage in full-size mock-up of Pickering G.S. reactor. Opposite page: fuel bundle is examined with optical comparator.*



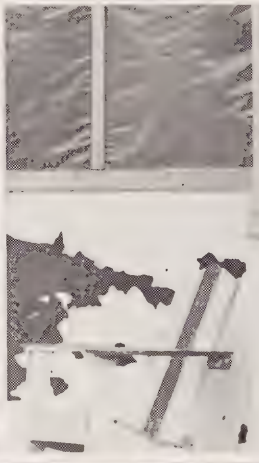





Allied
Van Lines













# mattagami saga ends

*ature will soon take over as Hydro*
*milies move out of Little*
*ong and on to other projects. But*
*e kids and cats and mom*
*id dad won't soon forget their long*
*journ in the far northeast.*
*our giant generating stations and*
*transmission line*
*twork mark their stay.*

**only the memories remain as Hydro construction people pull out of the northeastern frontier**

It's September in Little Long and a light breeze sighs over vacant lots, whispers through the weedy greenness of tangled gardens and kicks up tiny spurts of dust from grey, deserted streets.

Gone are the spick-and-span rows of trailers and homes, the well-tended lawns and flower beds. Gone is the hurly-burly of construction camp-life, the bustle and the rush.

Names such as River Drive, School Road and Main Street are nothing more than memories for the engineers, laborers, cooks, typists and carpenters—the hundreds of people who have followed Hydro from this solitary outpost 42 miles north of Kapuskasing to other projects across the province.

Behind them remain three giant concrete structures, part of a $200 million complex producing sufficient energy to supply more than 250,000 homes.

The three hydro-electric projects — Little Long, Harmon and Kipling — straddle the Mattagami River as it tumbles over the northern edge of the Laurentian Shield on its journey to the muddy shores of James Bay. Complementing the group, and part of the complex, is a five-year-old station at Otter Rapids on the nearby Abitibi River.

The breeze that caresses Little Long is an empty one. It no longer carries the early morning rumble of yellow buses, taking a thousand men to work. Neither does it waft the acrid smell of insecticide, once sprayed daily around the camp, nor the aroma of succulent pastries, pride of a departed cafeteria chef.

All that is gone. Only a few buildings remain to house a skeleton staff and provide storage for equipment during the long northern winter. The withdrawal will be completed next spring and the site surrendered back to nature.

Swarms of blackflies and mosquitoes will invade the abandoned camp as the encroaching wilderness begins to heal the scars of six years' furious activity. Perhaps the occasional moose or bear will snuffle and snort around, suspicious of the last, lingering traces of man.

Throughout the summer, trailers have been towed away and their wooden lean-to extensions torn down and burned. Portable homes and workshops were unbolted as families packed their bags and headed for other Hydro projects farther to the south.

Many of them will pioneer a new camp in the bush when Hydro starts work on a $26 million hydro-electric project near Aubrey Falls, 45 miles northwest of Elliot Lake on the Mississagi River. A smaller version of the Little Long camp will be established there next year for up to 350 workers.

Key personnel are already living in the area. Much of the construction equipment is being transferred from the completed Mattagami projects while many buildings removed from Little Long will be erected, jigsaw fashion, at the new camp.

When completed in 1969, Aubrey Falls will be Hydro's third Mississagi station, joining the George W. Rayner and Red Rock Falls power plants.

And more than 130 workers have already swapped the flies and dust of Northeastern Ontario for similar conditions in the Madawaska Valley, where extensive hydro-electric development is also under way. A $30 million station at Mountain Chute is nearing completion while extensions to the existing Barrett Chute and Stewartville plants, a few miles downstream, are slated for service in 1968 and 1969.

Men who worked at Little Long are also busy moulding shapes of the future at the site of Pickering nuclear station, near Toronto, and at the huge Lambton coal-burning project, beside the blue waters of the St. Clair River.

These men have left a masterpiece of automated efficiency behind them in the north — it takes just two persons to operate the entire four-station complex from a control room at Pinard transformer station at the northern terminus of the EHV line.

The stations respond obediently to VHF and microwave signals from Pinard's 300-foot high radio antenna. Generators are started up at the flick of a switch or the push of a button, while flashing lights and a gong warn of impending trouble.

Should a failure be serious, the defective unit will shut itself down until maintenance crews arrive; overheating will cause carbon dioxide gas to be injected inside the generator,








kipling g.s.
harmon g.s.
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kipling g.s
230kv
trans line
to pinard
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line
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*hey tamed the turbulent Mattagami nd sent power surging more an 400 miles to the south before aving Hydro's northerly nstruction frontier. Ontario ydro Chairman George E. athercole is shown presiding at the ening of the new hydro- ectric complex, and with Highways inister Charles MacNaughton ceremonies marking completion of e new road to Fraserdale.*

diminishing the risk of fire. Each station has its own burglar alarm system and the presence of any intruder would be quickly announced at Pinard.

The Pinard control centre syphons power from the four power plants at 230,000 volts, relaying it to load centres in Southern Ontario along a 500,000-volt extra-high-voltage transmission line.

With the completion of the Mattagami River stations and the official opening ceremony long past, the construction men have moved on. Hydro's current building program, largest in its history, brooks no delay between projects.

Recollections of Little Long are fading, although some incidents will inevitably stick in mind.

Like the time the driver of a station wagon converted to run on rails lost a race with the stork (the expectant mother gave birth to a son at forty degrees below zero along the track to Kapuskasing); or the November evening that fire raced through the little St. Louis chapel, leaving only a burned-out husk.

Inches of thick, black mud formed the first and lasting impression for many newcomers while the time some Halloween prankster threw the camp into confusion by turning off the propane gas supply to trailers and homes will be hard to forget.

Toil, sweat, tears and laughter — inevitable ingredients of life — were all there. And these are the ghosts which now haunt the vacant lots and deserted roads of a settlement once called Little Long. □

## big day in the north

About 260 government, business and Hydro officials travelled deep into the Northern Ontario bush to see Municipal Affairs Minister Wilfrid Spooner and Ontario Hydro Chairman George E. Gathercole officially open the Mattagami River power stations.

Mr. Spooner was deputizing for Prime Minister John Robarts, whose flight was grounded by fog.

Among the contingent were members of the Ontario Legislature, business executives from Southern Ontario, labor representatives, OMEA and AMEU officers, members of the press, and Hydro officials.

Prominent industrialists and businessmen from Northern Ontario and the mayors and reeves from the Cochrane and Timiskaming districts also attended.

Mr. Gathercole told them that power from the new developments would push the province's hydro-electric resources over the 5,000,000-kilowatt mark for the first time — a fitting milestone for Hydro's 60th anniversary.

Hydro-electric stations still accounted for more than 60 per cent of Ontario Hydro's total resources and a further 1 to 1.5 million kilowatts were capable of development.

"We expect to proceed with this development at the rate of about one or two sites a year," he said.

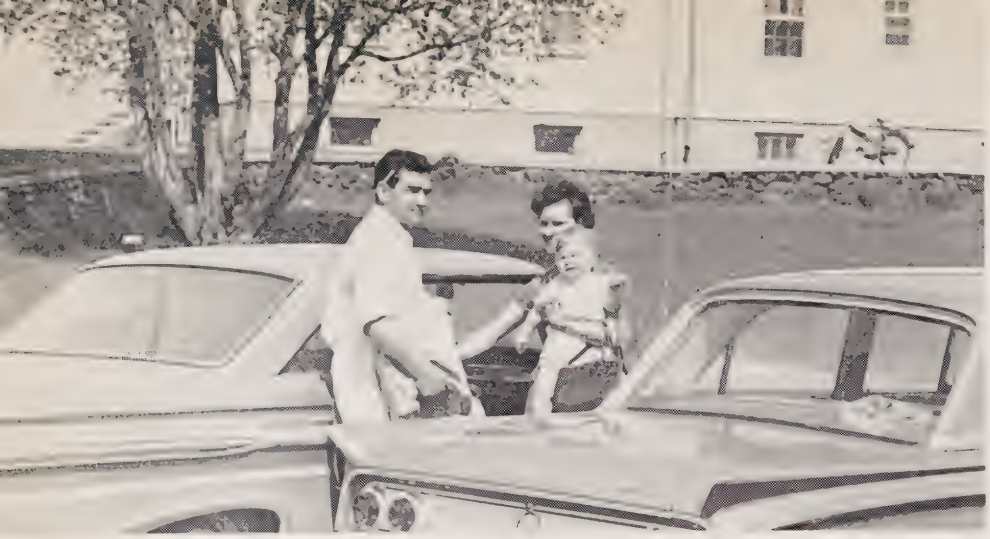
Mr. Gathercole added that Hydro's commitment to double its generating capacity within the next decade would test the organization's ingenuity and resourcefulness to the utmost. Expansion problems were being compounded by the buoyant economy, which was causing delays in the delivery of materials and equipment.

Describing the temporary camp erected at Little Long to house construction workers and their families, Mr. Gathercole said that in six years more than three million meals were served at the camp, including 2,750,000 pounds of meat and nearly 750,000 pounds of flour.

"Everything was done to provide the amenities of modern life, to recreate healthy working and living conditions, but there was still the arduous toil, the unaccustomed weather and, even more wearisome, the feeling of isolation."

Mr. Gathercole also paid tribute to the people who designed and built the dams, powerhouses and other facilities.

It was a brilliant, sunlit day as guests toured the Little Long, Harmon and Kipling power stations by bus and had a buffet luncheon in Hydro's cafeteria at the Little Long camp. They later watched Highways Minister Charles MacNaughton officially open the 45-mile road linking the hydro-electric developments with the Trans-Canada Highway at Smooth Rock Falls. □




LIBRARY





# road to the canyon

*ne Canyon youngsters had never n a car prior to completion he new highway. Traffic jams still scarcely a problem , to the folks who operate and ntain Hydro's northeastern nplex, the road link with the out- makes all the difference.*

**linked with the world by highway, the people who operate and maintain Hydro's complex on the James Bay watershed have lost their sense of isolation**

Forty-five miles of stone-flinging gravel, the thinnest of lines etched across northern forests of spruce, poplar and silver birch, have wrought a remarkable transformation for the 450 men, women and children at the Ontario Hydro community of Abitibi Canyon.

Perched 250 feet above the thundering Abitibi River, the tiny community was dependent for years on the twin steel ribbons of the Ontario Northland Railway, extended north in the mid-thirties for the building of Abitibi Canyon power station.

One train heads south through nearby Fraserdale Station each day and in the hush of the wilderness one can stand on the wooden platform and hear the departing diesel grinding on for miles. Its strident horn carries even farther.

Next day the train returns, pausing on its panting journey north to Moosonee. It is laden with mail and supplies while sleepy-eyed prospectors, trappers and vacationers peer through the windows.

But the pattern of years is changing. The railroad, while still an invaluable asset, is no longer the sole means of transportation to and from Abitibi Canyon.

The gay little settlement — its 92 homes painted in pastel colors of pink, green, grey and blue — houses operating and maintenance staff for the Canyon power station and for the new hydro-electric development on the Mattagami and Abitibi rivers.

To accommodate the additional people needed for the new power complex, the community has been doubled in size and renovated right down the line. Slated for completion next year is a community centre which will include curling and hockey rinks, swimming pool, bowling alley, billiard room and gymnasium — all under one roof.

Apart from the occasional truck, few Canyon children had set eyes on a motor vehicle until two years ago, when a highway was blazed 30 miles west to link the community with Fraserdale and the Little Long, Harmon and Kipling power projects.

That first road led to a trickle of cars, hauled in by rail, and dispensed with the need for a Hydro-operated railroad to Fraserdale from the Canyon. It took two more years to bulldoze through muskeg, brush and forest to the outside world. Officially designated Highway 807, it was built by the Ontario Department of Highways and financed by Hydro.

Now drivers can swing north off Highway 11 at the pulp and paper town of Smooth Rock Falls and be turning into the figure eight configuration of Canyon homes in little more than an hour.

This is still no super highway. "No fuel or accommodation for 45 miles" warn the signs while log-filled swamps and deep ravines edge the unfenced shoulders.

Psychologically, though, the arrival of the motor age has had a tremendous impact on Canyon life. As Station Superintendent Harry Bennett says: "That old sense of isolation has gone. You can tell the difference, even by the look on people's faces."

With the community's car population topping 100, every trim house now boasts an equally trim garage; families who collected their groceries by bicycle in summer, sled in winter, now drive to the local store.

It is nothing now for wives to slip into Kapuskasing or Cochrane to buy new clothes. Before, when it meant a two-day journey, they shopped by catalogue.

Of course, the Canyon remains an island of activity deep in the wilderness and trade at the Hydro grocery store continues to boom with a weekly turnover of nearly $3,000. And it can still be a lonely life for the single man.

School teacher Phil Englishman, there for a year, missed the bright lights of Toronto. "Don't get me wrong," he said, "this is a very friendly community and provides an excellent life for young married couples. But for me, Saturday nights can get pretty lonesome."

Adjustment takes time. Mrs. Douglas Podd, wife of a Pinard operator, used to live in Niagara Falls and now teaches in the community's school. "What bothered me at first was the fact that we just couldn't get up and go," she said.

It's the little things which count in a remote and close-knit society. Take books, for example, which used to arrive by rail and bus only twice a year. Now two busloads are driven in every three months to replenish the community and school libraries.

The Canyon's old feeling of "not belonging" has almost disappeared. With a road to the outside world, families can put up with the minor irritations of mosquitoes, blackflies, 50-below weather and even, on occasion, a bit of rain. □



# puppets and people

## step right up folks, and see the brand-new Hydro show at the CNE

Step up, step up, for all the fun of the fair. Well, the crowds did step up and many were the chuckles emanating from the darkened auditorium of Hydro's puppet theatre, set in the Better Living Centre of the Canadian National Exhibition in Toronto. Where Hydro was concerned, CNE '66 was all brand new.

In a show entitled in Mary Poppinese "Super hydro puppets prance for all the peoples - power," international puppeteers Leo and Dora Velleman took 30 light-hearted sojourns a day into Hydro history.

Judging by the crowds, who delighted in the antics of the 50 puppets, the show was a smash-hit. Among the stars were bicycle-riding little Danny Detweiler, the devil, and a parson who got involved with an electric coffee grinder. Sir Adam Beck was there too, of course.

Professional puppeteers for 16 years, the Vellemans build, design, write and produce their own shows. Dora takes charge of the script and invents the characters while Leo makes the puppets.

Holding nearly 200 spectators, the puppet theatre was the focal point of Hydro's 10,000-square-foot exhibit. But the more serious story of electricity was told by seven displays curved around the auditorium. The entire exhibit was called "hydroscope," a title suggesting the broad influences of electric power in contemporary life.

Colorful panels in the display areas depicted electricity's uses on the farm, in transportation and communications, lighting, industry, health and in the future, both indoors and outside.

Each display was brought to life by automatically-controlled lighting and sound techniques. For example, the transportation and communications section employed colored movies and stills, as did the health section where the movie sequence was filmed entirely at Toronto's Hospital for Sick Children.

Lighting in the puppet theatre was arranged for dramatic effect. In the rest of the exhibit, more than 1,000 electric lamps of various sizes, shapes and colors directed attention to particular points of interest at predetermined intervals.

Toronto Hydro's exhibit was, traditionally, next door to the Ontario Hydro display. Its main feature was a "travelectric" fashion show centred on Jamaica. Twin revolving sets allowed fashion models to display six major appliance areas, including a laundry room, complete with electric washer and dryer, and a full-scale electric kitchen.

Seven half-hour shows daily in the Toronto Hydro theatre set a steady pace for three professional models who displayed Jamaica-influenced clothing, along with the appliances.

At the end of the two-week stand, most people agreed that both the Ontario Hydro display, complete with animation and color, and Toronto Hydro's holiday-travel adventure appealed to the most select audience of all — the entire family. □

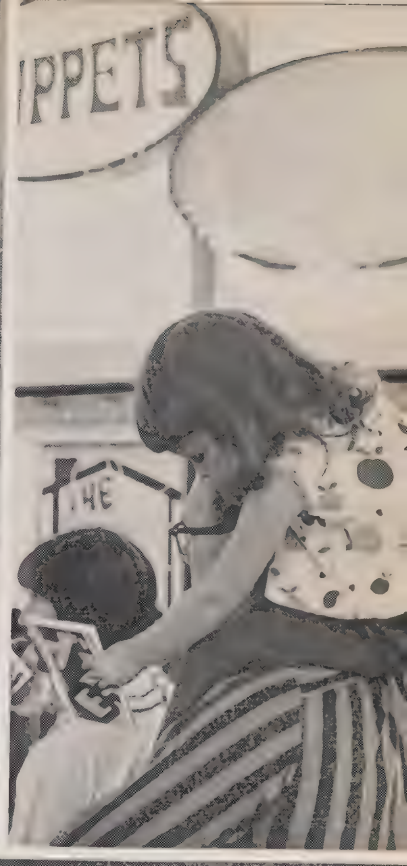
*At this year's CNE, Hydro tol*
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*Resting up after previewing the E*
*exhibit are Dr. J. E. W*
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*Taber, manager, Fort W*
*Hydro and Stan Webster, AMEU*
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*The latest in fashions — both wo*
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when they've
PAREE


IPPETS


UPPETS




TORONTO HYDRO
"Fashions in Electric

# the coming of color

only fifteen years old, Canada's television industry is entering a colo

Millions put up their overworked feet and loll back in hopeful anticipation each evening as family after family settles comfortably in front of what the British so aptly call the goggle-box.

Whether we like it or not — and most of us are secretly addicted — the TV cult is firmly and irrevocably entrenched in Canadian life. Less publicized, though, than viewing habits is the effect that television has on power consumption.

In Ontario alone, nearly two million television sets drain as much power from the Ontario Hydro system as the cities of Sarnia, Kingston and Port Arthur combined. Power poured into the grid by the giant Des Joachims station on the Ottawa River, fourth largest hydro-electric plant in the province, barely exceeds the amount required to bring the spine-chilling adventures of Hoss and Little Joe, Batman and Robin, into the biff, whack, bam atmosphere of countless darkened living rooms.

Canada's TV sales sprouted wings in the fifties and would now be reaching the saturation point, dependent on the replacement market, were it not for one single factor — the introduction of color.

Only a trickle of color receivers is percolating through the market so far, but manufacturers are confident that, with the start this month of regular color transmissions, sales will swell to a rainbow-hued deluge.

The Electronic Industries Association of Canada believes that nation-wide sales of color receivers may reach a high of 65,000 this year, and could hit 455,000 in 1970. Naturally, the $600 million-a-year electronics industry stands to gain most and growth in the color field is expected to produce at least 7,000 new jobs.

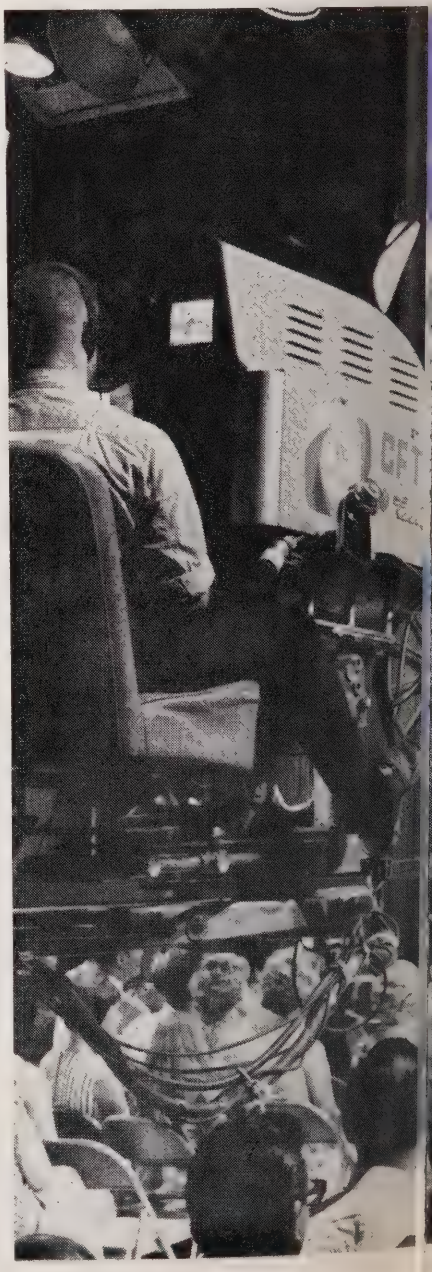
No one's been taken by surprise. The industry has long awaited this colorful off-screen bonanza and receivers are already rolling off the assembly lines of ten Canadian manufacturers. Until now, however, only one company has been making the costly picture tube in this country.

RCA Victor has manufactured color picture tubes at Prescott for some time and is at present building a $25 million factory at Midland in what has been called the biggest single expansion program in the history of Canadian electronics. Now, two others have entered the running. Production of color tubes will begin next month at Canadian General Electric's plant at Rexdale, near Toronto, while Sylvania Electric (Canada) is building a multi-million dollar plant at Cornwall.

Major Canadian networks have spent considerable sums in preparation for the onslaught. The CBC is spending up to $15 million on equipment and installations in the first phase of conversion to color and by fall expects to have 30 hours of prime viewing time in color each week on the English network and 15 hours on the French network.

Costs of color transmission hardware are extremely high. CBC is paying around $927,000 for a four-camera mobile unit and has started off with two such units, one in Toronto and the other in Montreal. Three full-time color studios have been established in Toronto, Montreal and Ottawa while most of the network's major broadcasting centres will be able to show color film.

Most color programs for the 11 stations in the Canadian Television Network are being produced at the CFTO-TV studios in Toronto. CFTO says it has been ready to transmit in color since March and has invested $2 million in equipment, including nine color cameras and two mobile units.



## w era





*Color adds greatly to cost and complexity of TV equipment. Production, left, is being shot in color at a Toronto studio.*

Costs are also a drawback for the viewing public. Average price of a color receiver is $750 while luxury models may top $1,800. Cheapest on the market is an 11-inch portable selling at $399.95.

Prices are higher in Canada than in the United States because of the current low volume of production and because this country has a 15 per cent excise tax in addition to the 11 per cent sales tax on receivers, and also places 20 per cent duty on some imported parts.

The trend in black and white receivers last year — half the number sold were portables — indicates that people were waiting, either for the advent of color television or for lower-priced receivers.

Who will plump first for color TV? Well, if sales follow the precedent set by the black-and-whites, the rich and the lower middle classes will swing for color before the higher middle-income groups.

Perhaps the hardest thing for the layman to appreciate is how this latest piece of electronic

wizardry functions at all. And without indulging in higher mathematics, it is difficult to explain. But, basically, it is possible to transmit colored images over a black-and-white television system because of a discovery made more than 30 years ago.

A normal TV carrier wave, it was found, contains spaces into which another signal can be phased. A color camera analyses light's three primary colors (red, green and blue) and merges the information into one signal which is then inserted into spaces in the carrier wave without interfering with the monochrome signal.

At the receiving end, the color information is split once again into its primary components and fed to three electron guns in the picture tube, each directing a stream of particles at triangular groups of phosphorescent dots on the tube face. These dots glow red, green and blue when activated.

Variations in the intensity of the electron streams produce variations in color. For example, certain mixtures of red, green and blue will result in white light; an absence of blue will glow yellow. As with a normal black-and-white picture tube, the guns scan the screen in a series of horizontal lines to reproduce the picture.

It is the complexity of the color picture tube — really three tubes in one — which accounts for its high cost. Black-and-white receivers pick up the monochrome signal in the usual way and remain unaffected by the color information.

Any boom in color TV will undoubtedly add to Ontario's television load, taking into account the increased domestic consumption and the power used by the expanding industry. Color receivers use substantially more power than their black-and-white counterparts although, looking well ahead, the introduction of integrated circuits — minute chips of silicone incorporating all the electronic bric-a-brac of transistors, capacitors and resistors — may reduce this problem.

Power will also be needed to run new industry established to meet the boom. RCA Victor's plant at Midland is expected to require about 12,000 kilowatts while the Sylvania installation will also require substantial amounts.

Color TV has arrived. But its ultimate success will depend very largely on its quality. Only recently, a psychologist warned Canadian advertising men about the pitfalls of this new medium.

"There is a lot of nonsense written about color TV," he said. "Don't think you are going to have an easy time. Color will be a wonderful and a powerful advertising tool, but it will create many technical problems — and w sometimes compete with selling messages the wrong colors are chosen.

"When a viewer sees something on TV black and white, he is not aware that it is bla and white. He is aware of the shape and t action. But when he looks at color, he is awa of the color. And for this reason, if you ha the wrong color you are doing a great deal harm," he said.

Another drawback of which the ad men a fully aware is that no two people see the sa color, therefore what may be an acceptab tuned picture to one viewer may look terri to another.

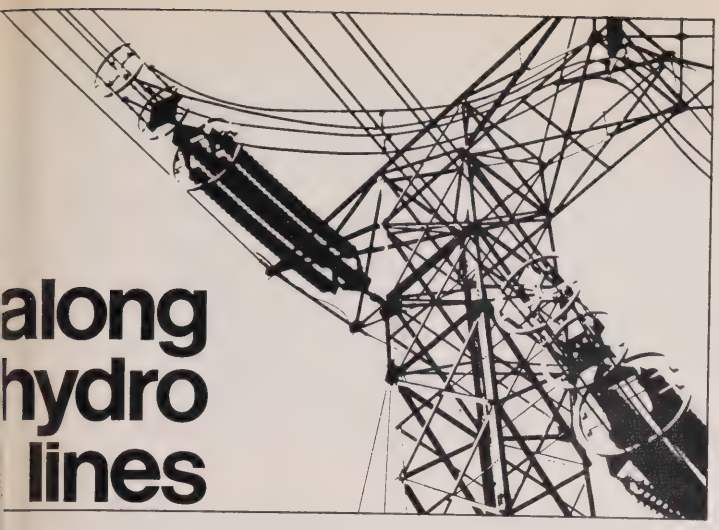
Ontario Hydro's own Advertising Depa ment is approaching the new medium w caution. Some color commercials are in p duction but, generally, the department is wa ing to assess the situation.

It was a CBC official who summed up t entire psychological problem of colored vie ing in a single sentence. "Color," he said, an experience rather than something we se

Our reaction to this experience may w determine the future of color television.

*Black and white picture tubes p assembly lines at Rexd plant of CGE. Plant is being expan for color tube product*





# along hydro lines

## eneral McNaughton



*will long be remembered.*

of the last public appearances of the late General A. G. L. McNaughton, h rose to Canada's highest military rank and achieved distinction as neer, statesman and conservationist, was at the Engineering Institute anada's annual meeting in Winnipeg. It was at this meeting that the eral warned that the diversion of Canadian water supplies to the United es could be perilous.

e general is shown above receiving a token gift at the meeting from r. M. Hambley (right), EIC president and general manager of Ontario p. General McNaughton died on July 11 at the age of 79. □

## ideau Canal going electric

lowing the example established by the Trent Canal system, the first erically-operated lock went into operation on the Rideau Canal recently lwboro. The single lock has a lift of over seven feet and is operated by lockmaster who sits at a small control panel operating the pumps, gates, navigational warning lights. For 134 years the lock was operated by hevy wheel that required two men to turn it.

Some opposition to the modernization program has arisen on the olds that it will destroy the historic aspects of the canal system. There e 7 locks between Ottawa and Kingston. □

## rsh from the Arctic

ade sunlight is permitting fresh vegetables to be grown year-round t Kenai Peninsula of Alaska, a sub-Arctic region limited by nature to owing days.

Sylvania Electric Products has installed 4,000 special fluorescent lamps a 2,000 square-foot fibreglass building to stimulate growth of crops ch as radishes, tomatoes and cucumbers. These lamps dispense with e ed for sun by providing light in the blue and far-red areas of the color spectrum, encouraging early maturing of the plants. The growth rate is 10 to 20 times faster than those grown conventionally in a year-round warm climate.

Supplying both water and plant food, the irrigation system obtains warm turbine water from a nearby power station — cold water tends to shock the plants.

A food chain owning the installation maintains that fresh produce shipped into Alaska is expensive and ripens en route, affecting flavor. Imported lettuce, for example, sells for 70 to 80 cents a pound during winter. □

## Piping in the oil

Electrical, gas and telephone services aren't the only ones going underground these days — the underground distribution of fuel oil is the latest feature in the home heating battle. Domestic Oil Transmission Systems, of Scarborough, installed the first central oil distribution system in Metro Toronto last year, serving a 169-home subdivision. Now preparations are being made for a similar system in another development of 1,300 homes in the Toronto area.

This is claimed to be the largest such installation in the world. Operating on a pressurized pumping principle, the system depends on a large underground storage tank on the edge of the subdivision. Fuel oil is pumped through a network of buried copper tubing into the homes, where it is filtered and metered before entering the burner. □

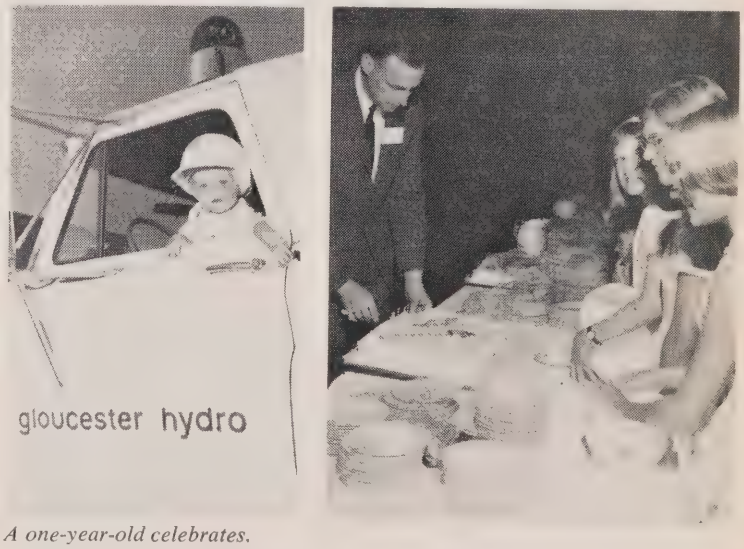
## A bouncing baby

Gloucester Hydro celebrated its first year of existence with all the trimmings — from birthday cake to hats and balloons. The "baby" utility, which serves Gloucester Township, near Ottawa, opened the doors of its new office and service building to staff, press and public alike.

The staff and customer events were held on successive evenings. The utility's 28 employees and their families were invited, along with the press, to a party on the first night while an open house was held for customers the following evening. Conducted tours were provided for more than 200 visitors.

A. J. (Art) Bowker, chairman of Gloucester Hydro (shown cutting the cake) recalled highlights of the utility's brief history.

"The operation of our own Hydro system has provided average rate reductions of about five per cent for residential customers in the town-




*A one-year-old celebrates.*

ship," he said. "Ownership of our own Hydro utility is a long-range venture which, as the township continues to expand, will provide Gloucester residents with stable hydro rates similar to those enjoyed in other municipalities in Ontario."

Purchase of the system from Ontario Hydro for $1,630,000 was approved by the voters in December, 1964. First steps towards the formation of the new utility were taken in March 1965, when Gloucester Township Council appointed Mr. Bowker, Arthur Parisien and Reeve Earl Armstrong as a

Hydro committee. Mr. M. S. McEwen, an electrical engineer and former Ontario Hydro area manager, was made general manager.

The new system opened for business in July, 1965, with a staff of three and temporary offices in the basement of Gloucester Township Hall. Gloucester Hydro had the distinction of being the first municipal system in Eastern Ontario to adopt the new Hydro symbol and color scheme.

"Establishing a new business is an expensive venture," said Mr. Bowker. "In our first year of operation we have spent close to $100,000 on vehicles, tools and office equipment.

"We look to the future and the continued growth of the township. The addition of several hundred new customers in the next 18 months will reduce substantially our cost per customer for service," Mr. Bowker said. "And we trust that continued further development will result in long-term reductions for all of our customers." □

## Competition ahead

R. J. Rutherford, president of the American Gas Association, recently outlined plans and developments of the industry to the New York Society of Security Analysts. Particular attention was being focussed on air conditioning. Last year, he said, 31,100 gas air-conditioning units were installed in the United States.

Mr. Rutherford also said that a residential gas air-conditioning unit is being developed that can be applied to both central year-round air-conditioning and to small window units. Its cooling phase can be used to convert existing electric window units.

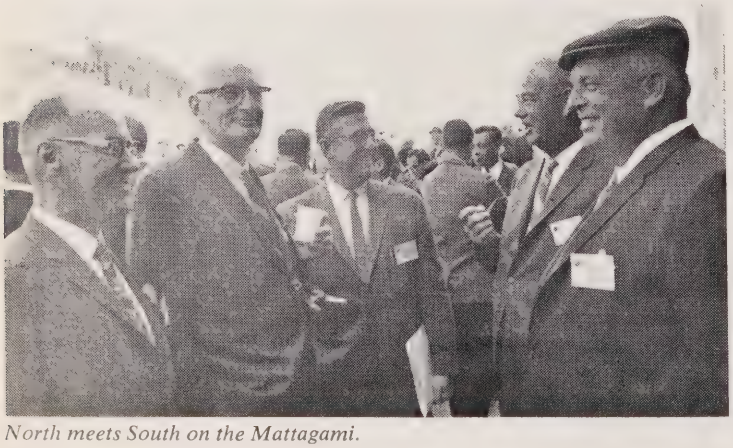
Talking about on-site generating, Mr. Rutherford said that about 330 gas total energy systems were now in operation. Fuel cell performance had been raised 80 per cent and the material cost reduced from $200 to $40 a kilowatt. The industry is planning to field-test fuel cells by 1969 and enter commercial production by 1972.

Other gas industry plans include: the organization of an industry group to protect the cooking load; the commercial development of an under-counter kitchen incinerator; a gas-fired, grease-vapor flue incinerator for commercial kitchens, aimed at eliminating a major fire hazard in restaurants; a commercial automatic coffee maker and a fully-automated commercial kitchen. □

## Pow-wow in the Northeast

Officials of the OMEA and AMEU had an opportunity to talk shop with Ontario Hydro representatives during the official opening in Northern Ontario of the Mattagami River hydro-electric projects. Government, business and Hydro officials from Southern Ontario travelled by train to see Municipal Affairs Minister Wilfrid Spooner and Ontario Hydro Chairman George E. Gathercole do the honors.

Many northern VIPs attended the opening, including representatives from the Northeastern districts of the OMEA and AMEU. Shown left to right are H. B. McCubbin, North Bay Hydro commissioner; E. C. Dash, chairman of Sudbury Hydro; N. H. MacKinnon, Sudbury Hydro manager; E. F. Burbank, Toronto Hydro, president of the AMEU, and W. R. Mathieson, AMEU secretary-manager. □



*North meets South on the Mattagami.*

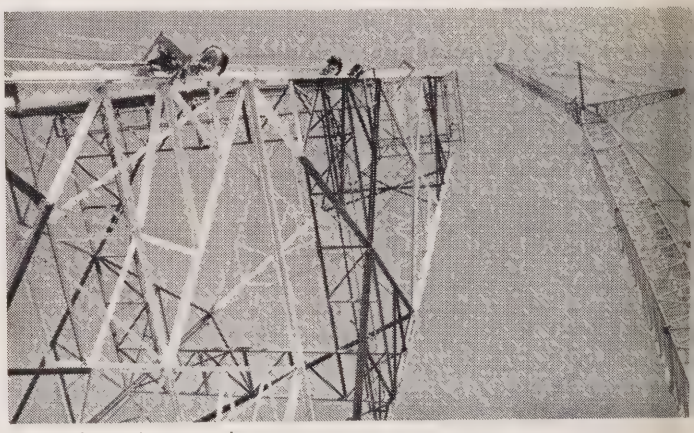
## Tall tower

Motorists travelling south from Sarnia alongside the St. Clair River v treated to an unusual spectacle as one of the largest mobile crane the business hoisted the final sections of a 320-foot tall Hydro transmis tower into place.

So unwieldy was the crane that a second one was used to assist 140-foot jib into the air. Two towers — one in Canada, the other in United States — were erected to carry a 345,000-volt interconnec between Ontario Hydro and two Michigan power utilities.

The tower on the Canadian side is the heaviest in the Hydro syster weighs 225 tons and was built to withstand the terrific strain impo by transmission lines approaching it at right angles. On the actual cross the lines will sag to a point 160 feet above the river, giving ample clear to Seaway shipping.

Hydro crews painted the tower's steelwork orange and white be assembly, avoiding the necessity of painters working 320 feet above



*Tower for a river crossing.*

ground and also the possibility of splashing traffic below. The vivid c are to make the tower visible to aircraft.

Conductors will be suspended across the river this month. A helic is being used to string initial pulling lines. The tie-line is due for co tion by December. At first, it will operate at 115,000 volts, stepping 345,000 volts once Hydro's Lambton power station, three miles enters service in 1968.

The new link will eventually provide greater security for the Hydro network and, in the meantime, give additional protection ag power emergencies in Western Ontario.

## Growing up

Toronto Hydro has only one direction in which to grow and that's up limitation which doesn't appear to be affecting its load building effort much. In 1965, peak load of the Toronto Hydro system reached 71 kilowatts, 4.9 per cent greater than the 1964 peak. While this is a rate of growth than many municipalities, it is particularly impressive the circumstances.

Electric heating accounts for much of the continuing growth. Th James Town redevelopment project is an example of the kind of pro underway. It will have 5,000 apartment suites and an estimated lo 25,000 kilowatts. Another is the 27-storey Richmond-Adelaide Centre all-electric building which is expected to have a load of 3,500 kilowat

Almost 40 miles of streets in Toronto and Leaside are now free of bution poles and overhead wires.

## Multi-million dollar project

Approximately $90 million will be spent in Britain in the next six yea computer facilities to help in research. Under a plan announced re by the Secretary of State for Education and Science, regional comp centres will be set up at the Universities of London, Mancheste Edinburgh. Other universities and research institutions will be al program their work at these centers.

## Men behind the symbol



*Home run for the new look.*

ere's no mistaking members of Lakeview GS ball team — each has the dro symbol emblazoned across his chest in no uncertain fashion. The m plays in the Ontario Hydro-Electric Softball Association league.

Now on the ball diamond, the orange and vermillion "OH" has also been t in concrete, frozen in ice cream and, so we hear, carved on the dstone of a grave. □

## he art of splicing

fine art of cable splicing got a big boost from the Niagara Falls District rd of Education's adult education program last term — with an assist n an Ontario Hydro employee.

wenty-two employees of Welland Hydro and St. Catharines PUC were oughly grounded in splicing techniques at a 23-week course sponsored he adult education group. Ed Mateyk, power maintenance electrician at Sir Adam Beck generating station, was the instructor and he is happy to rt that all passed the course successfully.

r. Mateyk is shown at left in the photo with Fred Carter and Ray Philips elland Hydro.

able splicing, a specialty of the power maintenance electrician, may be ired either for new installations or when replacing faulty cables. The



*herness is the goal.*

's range from a half inch to four inches in diameter and may contain al hundred small wires or a single conductor.

rk locations for a splicer vary from indoors to outdoors, from pole top nhole and often from a scaffold or stage. But the age of mobility and le power tools has done much to improve the lot of the splicer and ork locations need be without heat, light and power. □

## tro Hydros merge

eal smaller Hydro systems will disappear with the six-borough amal- ion of Metropolitan Toronto next January. Merging with the City of o will be the villages of Forest Hill and Swansea. Etobicoke will be sible for Long Branch, Mimico and New Toronto while York will absorb Weston and East York will take in Leaside. North York and Scarborough are unaffected.

Long Branch and Leaside were previously served by Etobicoke Hydro and Toronto Hydro.

Weston is favoring the establishment of a Hydro commission in the new borough while York wants a committee of council. Customers in the Forest Hill and Swansea areas can expect to be billed by Toronto Hydro under the new arrangement. □

## ABCs of electric heating

Danforth Technical School in Metro Toronto is believed to be the first in Ontario to include electric heating as part of its electrical course. Approximately 25 per cent of the course's content will be devoted to electric heating and students who satisfactorily complete this section will receive a certificate indicating they are qualified electric heating consultants. The certificate will be provided by the Ontario Electrical League.

Last term, 22 of the school's electrical course students were taken on a tour to view large electrically heated commercial buildings under construction in Toronto. They also toured Ontario Hydro's Lakeview thermal plant to learn first hand how electricity is generated in large coal-fired stations. □

## CAMA reviews promotion programs

Two utility promotion practices having a significant effect on the marketing of major appliances are being reviewed by Canadian Appliance Manufacturers Association teams. One is the giving of consumer incentives with the purchase of a major appliance. The manufacturers have been asked to share the cost of incentives with the utilities and dealers.

The supplying of major appliances for home economics classrooms, a long-term utility promotion, is also under study. In some areas appliances are changed annually causing a disposal problem which manufacturers have been asked to help solve. □

## Snakes and sparrows

Having failed with bird repellents and artificial snakes, Central Louisiana Electric Company is using chemically treated feed to discourage sparrows from nesting in its substations.

Damage to equipment caused directly or indirectly by the birds has resulted in serious power interruptions. On one occasion a five-foot chicken snake seeking bird eggs initiated a power arc which caused $250,000 damage. Sheet aluminum bolted to tower legs and around equipment failed to halt the wigglers.

Other substation troubles have been caused by birds dropping straw and other nest materials across equipment and shorting it. Camphor balls placed in the nests were ineffective in deterring the birds. □

## Pooled test facilities

A feasibility study will be conducted into the proposal that centralized or pooled facilities be set up in Canada for high-voltage and high-current testing for research and development. It has been suggested the project be a joint effort by manufacturers, utilities and government.

Acting on the recommendation of some manufacturers, the Department of Industry distributed a questionnaire last fall to assess the needs of the electrical industry for test facilities. Based on the results of this survey, the feasibility study, whose terms of reference will be prepared by the Canadian Electrical Manufacturers Association, will be presented to those concerned to determine the extent of participation. □

## Beetle birth control

If the University of Toronto's Shade Tree Research Laboratory could find out what attracts male elm beetles (other than female elm bark beetles) it would help them in combating the devastating Dutch Elm disease. The laboratory recently found a way to chemically sterilize male beetles but the same process doesn't affect females. Unfortunately, both sexes spread the disease.

If sterilized males, released into the great outdoors, mate with natural females, the eggs do not hatch and the beetle population is reduced. How-

ever, if the females are released along with sterilized males, they could mate with natural males and the population would continue to explode.

An effective control program, which would involve breeding 100 million sterilized beetles, could be developed but no one knows how to segregate the sexes on a mass production basis. The beetles are about one-eighth inch long. One suggestion has been to develop a perfume that would attract men beetles only.

Researchers are also trying to determine whether the fungus which kills the elms produces a toxin. If so, and the toxin can be isolated, an effective anti-toxin might be produced.

Meanwhile, the disease sweeps on and the emphasis for control remains on spraying of healthy trees and felling and burning of diseased elms. A

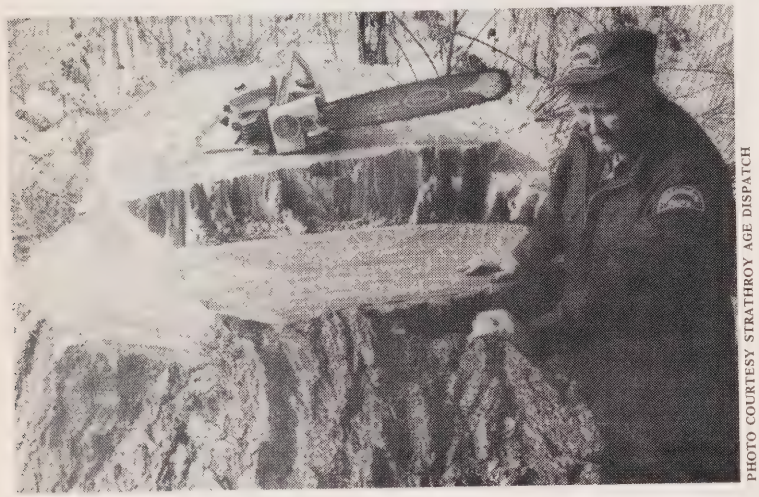


PHOTO COURTESY STRATHROY AGE DISPATCH

*Stumped by a beetle.*

chemical injection procedure tested last year is said to have been disappointing.

One of the province's largest elms, a victim of the disease, was toppled this year by Ontario Hydro foresters in Strathroy. George Laird, parks superintendent, views the remnants. Located on property being developed by the Strathroy Parks Board as the town's centennial project, the diseased tree was about 135 years old and measured over 16 feet in circumference.

Another landmark, the famed "Sauble Elm", growing in Amabel Township, Bruce County, and reputed to be Ontario's largest living tree, is also afflicted and doomed to die. Towering 125 feet, the giant has been a tourist attraction in the area since it was brought to the attention of the Sauble Valley Conservation Authority in 1959. □

## municipal briefs

**An AMEU committee** is investigating the needs of the municipalities after accepting an Ontario Hydro proposal to train personnel at the Conference and Development Centre to be built at Mono Mills, near Orangeville. Mr. Ralph Nicholson, Ontario Hydro's director of manpower, said recently that apart from initial training, electricians must have refresher courses every few years. He stressed the necessity for a unified course for linemen, saying that working methods differed from utility to utility.

**Lindsay Hydro's office** on William Street North is getting a $25,000 facelifting for the Centennial. On completion next month, the entire front of the building will be floodlit.

**In a recent column** in the Leaside Tribune, Maurice Punshon gives North York Hydro a pat on the back. Writing about moving into a new home, he says: "North York Hydro was the only utility that greeted us with a friendly letter. They said, 'We wish to take this opportunity to welcome you to your new residence, in which we hope you and your family will find much pleasure and comfort.' We thought this was rather nice and it was appreciated."

**Mr. F. S. Dewhurst** is retiring from the position of comptroller-treasurer of Port Arthur PUC after serving the commission for nine years. He will be succeeded by Colin M. Nicholson.

**Forty-one years ago,** James Wickiam joined East York Hydro as a lineman. He rose through the ranks, becoming superintendent in 1939 and mana in 1950. Now Mr. Wickiam, head of a utility serving approximately 25, customers, is retiring. "I plan to take it easy for a while and do so travelling," he says. He is already lining up trips to Florida, Britain possibly British Columbia. Mr. Wickiam is succeeded by John Sinc Shand, formerly consumer service superintendent with Ontario Hyd Central Region. Mr. Shand graduated in engineering at the University Toronto in 1945.

**Ontario Hydro film crews** have been on location in the atomic energy t of Deep River, shooting sequences for a film dealing with the convers of homes to electric heating. Peter Parker, home heating sales supervi with Ontario Hydro, says that in addition to being a highly photoge town, Deep River is one of the communities where conversion is tak place on a big scale. The film will be seen by staffs of the munic utilities.

**For the first time in 35 years,** there's a change in management at Walla burg Hydro. Manager Douglas Stewart is retiring after 46 years with commission, 35 of them at the helm. Succeeding him is S. Miles Duf formerly supervising work measurement analyst with Ontario Hydro's W Study Department.

**Oakville PUC** has been congratulated by its local paper, the Daily Jou Record, on the timing of its air-conditioning promotion. With temperatu soaring in the 90s, people flocked to appliance dealers and nearly bou out all the air-coolers in stock. In an editorial, the newspaper said: the demand for such summer consumer comforts like air-conditio should prove, not infrequently it turns out that warm weather not loosens neckties but purse strings as well. Happily, most concerns cluding the PUC, have the foresight and enterprise to cash in on this weather buying. Smart thinking!"

**A $150 million,** 450-acre residential, commercial and industrial com was approved by North York's council recently. To be located in Woodbine-Finch area, this development will rival the township's million Flemingdon Park complex. The residential area will accommo 7,000 people in more than 600 homes and 2,000 high-rise apartr suites. Also included are 13 acres of shopping centres.

**Ottawa Hydro's program** to have underground wiring in part of the d town area for Centennial year is on schedule. The Hydro Commis together with the National Capital Commission, has approved new c corrected mercury vapor street lights, but the NCC is still determinin type of street lamp standard. It is intended to have underground wiri all the downtown area within five years.

**Fergus PUC is proud** of the part played by utility personnel in buildir mile of 27.6 KV line to serve a 3,000 KVA substation at the new Ca Wire Company plant. The line employed 45' to 70' cedar poles throug

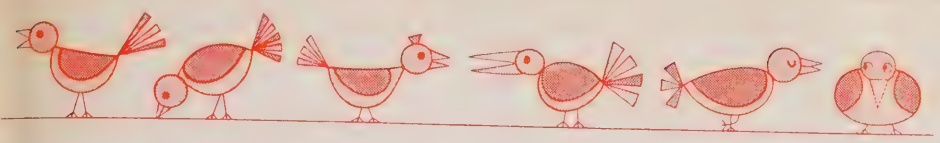
**The AMEU's** fifth annual Metermen's Workshop will feature an exte dialogue with the government agency most directly involved in met and service entrance equipment. A representative of the Departme Trade and Commerce will present a paper on metering installations join a discussion period. The afternoon of November 17, first of the shop's two days, has been set aside for this purpose. To be held i Skyline Hotel, Etobicoke, the Workshop will be opened by AMEU Pres E. F. Burbank. Last year, 93 utilities were represented at the event.

### July energy production

Primary energy provided by Ontario Hydro in July totalled 3.5 billion kilowatt-hours, an increase of 8.8 per cent over the sam month a year ago.

For the first 7 months of 1966, the total is 27.55 billion kilowat hours, up 10.8 per cent over the same period last year. Adjuste for seasonal influences, primary energy demand in July was 3.9 billion kilowatt-hours, 2.8 per cent less than the previous montl

The seasonally adjusted total for July represents 47.18 billio kilowatt-hours at annual rates. This is 339.2 per cent of the energ demand in 1949.



# off the wires

■ Blackout babies, power bills and hot air all igure in our deliberations this month along with n erudite look at inflation and a few words relative o the over-all implications of the electric toilet.

After a lot of finger counting, sociologists seem bout to come up with an answer most of us knew ll along — namely, what goes on when the lights o out? Nine months to the day after last Novem- er's blackout they were nodding sagely at the teep upturn in New York City's maternity ward tatistics and suggesting that the irradiancy of he moon was more conducive to amour than ne incandescence of Edison.

Still reluctant to call a spade a spade, one ociologist made this remarkable observation: "The ghts went out and the people were left to interact ith each other."

Another revealed the sorry state of our blase ociety by blaming the upsurge in births on lack television. In other words, he seems to imply, ere just wasn't anything else to do.

And a Toronto nurse is quoted in the newspaper suggesting that the Ontario metropolis missed t on the baby boom because "the lights weren't t long enough."

True, and they were out too early in the evening. ople simply hadn't time to miss their television ts and seek less absorbing diversions. It will be st as well if those new little Americans never d out how their existence is due to a dark cture tube.

In the face of Prime Minister Pearson's urgent peal that all good Canadians tighten their belts help fight inflation, it might be helpful to dispel me economic fallacies which still tend to persist ong the unenlightened.

First, let's get rid of that corny old theory that uld tie wage levels to the production of goods d services. This is simply a sly ruse to get people work — a capitalistic hoax more and more of are beginning to see through. Why shouldn't nadian workers get as much as U.S. workers ng the same job? And let's see to it that the ple of Tanzania and Lower Slobovia don't miss th gravy train.

Production differences? Technological dispari- ? Marketing considerations? — stuff and non- se. It all boils down to cold hard cash and if Cada can't install more and bigger money- ing machines then we need a new government.

Meaningful wage increases, the mossbacks w ld have us believe, can only be brought about by saving, enterprise and (if you'll excuse the ex- ression) — hard work. What rot. How many men do it take to run a modern, automatic, all-electric m ey-making machine?

his would have the additional advantage of ov coming recent criticism to the effect that our dol r is shrinking, sagging and drooping. With the ne machines we could crank out crisp, snappy cu ency full of bilingual geese, beaver and cod- fis that would be a delight for all to behold.

course those cranky old reactionaries, dang hi hides, will try to spoil it all. They'll probably argue that other countries, still hard at work, will take a dim view of our moola menagerie.

Let them, we say. Jealousy will get them nowhere. And with all that funny money blowing around we could make up for some of our lost hockey prestige by becoming undisputed world champions at monopoly.

But we'll have to get those machines rolling fast — before the dollar fades away entirely. Some time ago a woman was fined for walking out of a store with eight dollars worth of unpaid for groceries in her purse. Today, she could have smuggled them out in her compact.

■ And a word of comfort for those of us who occasionally miss the last discount date on our Hydro bills. It happens, apparently, to some very important people. Take the case of Princess Tunku Pengiran Putri Noor Ehsani of the Borneo state of Brunei. She refused to pay on the grounds that free electricity was part of her royal prerogative. The power authorities thought otherwise and she was left in the dark when her bill reached $420.

Compared to His Exalted Highness the Nizam of Hyderabad, though, the princess is a piker. Once reckoned as the world's richest man, and still rather handsomely endowed with the material things of this world, he has managed to run up over-due power bills in the order of $80,000.

Considering that a penny's worth of electricity will fry bacon and eggs for two people, light a picture tube for 3.8 hours or run a food mixer for 6.1 hours, as our advertising people are prone to point out, His Highness must live a very full life.

Much closer to home, we might just mention the case of a high bill complaint which had the boys at West Ferris Hydro scratching their heads not so long ago. Investigation revealed that a hot water storage unit, originally operated by electricity, had been converted to gas (they do some queer things in the north) but they neglected to disconnect the electric elements.

An enterprising lot, those West Ferrisers. Where else can they build electric load with gas appliances?

■ Which brings us around, by a devious system of association best known to ourselves, to the all-electric water closet. Already in use in rai'way cabooses and other places where such basic comforts had previously posed a virtually unsurmountable problem, the new device promises to sever yet another link with the far-from-romantic past. We refer, of course, to the storied adjunct of camp and cottage — the outside two-holer or "parliament buildings."

A few will regret their passing, on the grounds that some of our best thinking has been done by those ensconced over an aperture of the proper dimension, and while contemplating the progress of a daddy long-legs down the long stem pipe on the Old Chum tobacco calendar. But these will be the weekend visitors or privileged members of the household not responsible for digging the pit or moving the establishment from vantage point to vantage point.

Dad will probably welcome the new AC/DC WC with open arms — if he's prepared to pay. One American model we admire retails at $495. Still, that's cheaper than color TV and, besides, it's ordorless.

Another model is said to work equally well with gas. That sounds natural enough, somehow, but fancy the advertising man's predicament if a competitive battle should develop around this neat little load builder.

The electric model would be safe, clean and modern, we suppose, with speed hardly a factor. As we suggested earlier, you can do a lot of things with a penny's worth of power.

■ And would you believe that the United States uses about 2.4 trillion gallons of hot water yearly? This total is almost double the per capita amount of hot water used in the home 25 years ago, reports the A. O. Smith Corporation who, for some reason or other, figured it all out. The company attributes the rise mostly to the automatic washing machine and the electric dishwasher.

Always bragging! Have they seen the Canadian statistic relative to the output of hot air? In this instance, it's remarkable how the production peaks co-incide with our kind of historic highlights. Volume is said to have reached an incredible 14 trillion cubic feet at the height of the flag debate, fluctuated mildly with only biculturalism to sustain outflow, and then soared to historic proportions under the influence of the Munsinger affair.

Analysts are reluctant to forecast the extent and nature of the next upsurge but few can see it occurring with parliament prorogued. Not that we have anything but the deepest respect for our Ottawa statesmen. Of course, they did switch the parliamentary heating system from coal to gas — a costly decision considering the free and bountiful supply of hot air on their doorsteps.

■ In response to a flood of inquiries from our readers (mother and Uncle Willie were wondering) as to the identity of the people shown with Sharon in last month's colored photos, we feel obliged to introduce them.

The well-built chap reading the Globe and eating the beans is Peter Maitland who writes speeches and does other editorial work between posing assignments.

Our mustachioed streetcar conductor is photographer Ted Johnston while the man in the checkered coat is Keith Dugdale. Keith does darkroom work when he isn't helping pretty ladies out of carriages.

That's Hydro News designer Al Waddingham on the golf course. Writer Paul Chisholm is in the speakeasy scene while the Hydro cafeteria staff helped out with War and Peace. Ye olde editor can scarcely be seen underneath the green car.

Anyway, it was a lot of fun and a lot of people put in a lot of voluntary work — and thanks a lot.

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# ontario hydro news

october/1966

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THE COVER

Workmen are shown positioning a transformer at Toronto's "city within a city" — the St. James Town development. It's Canada's largest all-electric apartment project and it won't add a bit to air pollution. Further details of high living in Toronto commence on page seven.

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# a co-operative appro to indian affairs

## they're teaming up to make Ontario's first citizens feel at home in the twentieth century

There's a long, long trail a-winding fro traditional traplines and fishnets of the In to the commerce and industry of the pro and our first citizens can be excused if stumble occasionally along the way. So ca people helping them to reconcile centuries-old customs and living habits the economic and social facts of the spac

But setbacks make headlines and l publicized incidents have focused attenti the Indians to the point where most respo citizens are asking themselves just who a Indians of Ontario and what, essential the problem.

Some mistakingly assume that the I population is on the decline and that r will eventually take care of any problems own inexorable way. In fact, the Indians sent one of the fastest growing groups country, thanks to improved health car employment conditions.

At the time of confederation, the I population of Ontario had dwindled to 1. largely due to disease introduced by th tlers. Today, there are some 52,000 regi or band Indians with treaty rights livi Ontario and 11,000 people of Indian an

When the Europeans first arrived i territory we call Canada, there were a mated 200,000 Indian inhabitants. A sharp decline their number has climb 211,000.

In Ontario, a more or less distinct lin be drawn between the Indians of the sou those of the north with the latter facir greatest changes and challenges in reo tion.

The Crees and Ojibways of the north maintained their more nomadic life wh the southern and mid-portions of the pro the Chippewas, Iroquois, the Confed Group of the Six Nations, the Potawat Mississaguas and southern Ojibways (like at Curve Lake described on page four) kept their identity while adapting well, f most part, to the economic society of th

At last count there were 112 bands liv

9 reserves covering 1,539,873 acres of the vince. The largest Indian Reserve in Canada hat of the Six Nations, near Brantford, with 00 members.

As citizens of the province, Indians are itled to all the privileges that go with that us and their interests, like those of their thren across Canada, are primarily the onsibility of the Federal Government's ian Affairs Branch of the Department of izenship and Immigration.

Since May of this year, however, community elopment and welfare programs for Indians non-Indians alike living in Northern ario are being supervised by a federal-vincial co-ordinating committee which can lve local government if desirable.

One of the best examples of teamwork in interest of the Indians is to be found at awe, a tiny community developed by the hieu Lumber Company, 70 miles west of t Arthur. Initially, 15 Indian families will ecruited from reserves to meet a chronic r shortage at Sapawe. The objective is to 45 Indian workers at this location within years.

ut there is a whole lot more involved than ng for a moving van. Not only will the be trained on the job, but their wives will chooled in homemaking, dietetics, child and all the other arts necessary to let them me fully involved socially and economi- in a community where they will represent about 30 per cent of the population.

ose with a hand in the project will include ntire town of Sapawe, the lumber com-, the reserve Indians of the area (who a right to inspect the facilities provided the entire rehabilitation program), the co Conference and Training Centre, n will provide much of the training and nce, eight provincial departments or izations and four federal groups.

arfing the size of the project is its signi- e for it is being carried out in the north many Indians live much as their fore- s did, relying on hunting, fishing and ng. But the environment is changing and velopment of resources is beginning to their lives.

ny point to the building of the early ng radar systems as the first contact for many of these northern people with cash-money, highly technical equipment and an entirely alien way of life. Construction of the Air Force base at Moosonee was another project affecting the Indians. Until it was built, the Indian population of the area averaged around 200. Now it's 10 times greater and the area offers little steady employment.

Like most of us, many of the northern Indians are not bilingual, speaking only their native language. It is with their children that the greatest hope lies for more social contact with the rest of the province and this can only be achieved through broad educational programs.

Indian attitude will, of course, play a large part in determining the success or failure of these programs. Some want total integration with the community and others don't. The latter have a great desire to preserve their culture and maintain self-administration while enjoying full educational opportunities.

Basic attitudes also conflict in the day-to-day approach to life, especially in the north. The Indian tends to live each day as if it were the last. For him, there is no tomorrow and the white man's preoccupation with saving money for a rainy day is somehow confusing and unacceptable. Money, to him, is something to buy what you want, not what you need.

"Work attitudes are another problem," says T. L. Bonnah, Regional Superintendent of Development for Ontario, who works for the federal Indian Affairs Branch. "An Indian is not lazy. Traditionally he has always been terrifically busy hunting and fishing. But there were also periods of relaxation and this custom lingers. We are asking him to change and to accept regular employment with all this implies."

Ontario Indians today receive their education in three ways: in Indian schools on reserves; in provincial and separate residential schools; or among non-Indians. Present policy is to place them, wherever feasible, in non-Indian schools.

Last year, there were 12,700 Indians attending school in the province and all were receiving the standard Ontario curriculum. Education centres, such as the one at Elliot Lake and another scheduled for Moosonee, are offering further opportunity. And each year, more and more are going to high school and vocational schools and even to university.

Job placement programs have also been set up to help the Indian find employment both on and off the reserves. Special employment officers are located in Port Arthur, North Bay, Sudbury, Timmins, Kenora, London and Toronto. These officers work with the National Employment Service to assist and encourage Indians to find jobs in a wider variety of occupations.

Programs are also established from time to time to meet special conditions. This year, for example, almost 1,000 Indians from Northern Ontario were brought south to help harvest the crops in the bountiful Niagara, Essex and Kent areas. At Peterborough, special courses were conducted in outboard motor maintenance to increase the graduates' chances for employment at tourist and outfitters' establishments.

Two years ago, a training program was set up, at the Indians' own request, to teach a group how to run a fall goose-hunting camp at Fort Severn, on James Bay. This was so successful that another will be started at Kapiskau, on the west coast of the bay. Other enterprising northern Indians own and operate commercial fisheries, supplying markets as far as New York and Chicago.

All programs are aimed at increasing Indian independence. Participation in formal leadership courses designed to make the Indian himself more responsible for the management of his community affairs has been very encouraging. Indicative of what can be achieved is the Walpole Island Reserve, which is now completely self-governed.

While the northern Indian strives to find his niche in the 20th century, the southern Indians, with a 200-year advantage, are beginning to show concern about keeping their identity. Since 1963, Indian folk schools have been established to study the various cultural groups and interpret broad social and educational themes.

In addressing one such school, Mrs. Ethel Brant Monture, noted Mohawk author and lecturer, outlined the basic challenge facing the Indians today. "We must live and create a new hope for our people," she said. "We must preserve the best of the old and accept the best of the new." □

# hydro lends a hand





## courses in tree care are a novel approach to Indian training

Hubert McCoy was an unemployed high school drop-out who had worked at many jobs—from swinging a pick and truck driving to fisheries research—and "wasn't too fussy about any of them."

William Chiskamish barely scratched out a living for himself and his aging mother by trapping in their native Fort George area on the east coast of James Bay, until five years ago. Then, prices paid trappers for furs nose-dived. He became a common laborer and in short order, joined the ranks of the unemployed.

Hubert McCoy is a 20-year-old Ojibway. Bill Chiskamish is 23 years old and a Cree. Both were typical of a group of 34 Indians who recently participated in an intensive six-week tree care training course operated for the provincial government by Ontario Hydro's Forestry Department at Puslinch Lake—about midway between Galt and Hespeler.

The "brainchild" of Lands and Forests Minister A. Kelso Roberts, the course trained Indians in the removal and treatment of trees infested with Dutch elm disease—the fungus infection which has become a major threat to Southern Ontario's elm population.

The course is part of a provincial government program established to provide Ontario Indians with further employment opportunities. Its participants were recruited by the Ontario Department of Welfare—about 99 per cent of the students being unemployed and with little prospect of a steady job.

Many of them were first approached while attending upgrading classes at Ontario Centres for Continuing Education in Elliot Lake and Moosonee.

Until their arrival at Hydro's mobile campsite most of the group had never heard of Dutch elm disease, and none of them had ever seen spurs for climbing trees. Only a week later, they were all working at the 50-foot plus levels, cutting away the tops of diseased elms in preparation for complete removal.

They climbed with spurs, used safety belts and carried life lines. Later on they were taught to "shinny" to the treetops without spurs. With 1,200 infested trees in the 880-acre training site, there was plenty of "raw material" on which to practise the new science.

A hand-picked crew—a forestry foreman and five journeyman foresters from Hydro's Niagara Falls and Georgian Bay administrative regions—both noted for extensive Dutch elm disease infection—formed the corps of instructors.

Working as three-man removal crev trainees were exposed to all types of con they would meet in doing a forester's jo in sparsely inhabited rural areas and industrialized, densely populated urban c

The eight-hour work day was spent e in the field and the hum of chainsaws s only for brief intervals when chief ins Norm Stirling or one of his staff war stress a point—usually dealing with p safety. Seldom did the trainees remov orange hard hats, except to wipe a per brow or swat a hungry blackfly.

Climbing came easy to the majority forestry learners. In the words of one more proficient ones: "It's part of our h Forestry work comes naturally to u forefathers hewed a living from the fo many years — we'll have no trouble."

Climbing, however, formed only a the training course. Also important were nition and control of Dutch elm diseas proper roping, cutting and felling techn

K. B. Turner, supervisor of forest pe trol for the Department of Lands and F said the course represented a significant ment for it meant the first exposure of n its participants to Southern Ontario li culture.

He expressed the hope that a majo them would accept positions with

*Looking upward towards a brighter future are these Ontario Indians who participated in a unique forestry training course sponsored by the provincial government and carried out by Hydro. Many graduates found employment, including the two Andrews brothers who joined Hydro.*



nicipalities, utilities, government depart-
its and private tree companies — where
e is a great demand for experienced tree
oval crews — after graduation.

With the course scarcely a week old, Pete
kins, Hydro's forestry training co-ordinator,
d: "When we're finished with these boys —
'll be able to hold down jobs as 'tree people'
the best of them."

fter graduation, 27 of the first class were
ed with various employers such as the
partment of Highways, the Niagara Parks
mission, Ontario Hydro, the Department
ands and Forests, the municipalities of
ener and Guelph, and with private tree
panies. And four of the graduates decided
urn to school.

second tree-maintenance course, based on
rst school, followed at the same training
ers. This time most of the 36 young
e attending were from Northern Ontario,
recruited by the Federal Indian Affairs
ch.

t the second course was the last for this
And they'll be taking a close look at the
s. If these young men can orient them-
to the prospects of steady employment,
djust to living in Southern Ontario, then
tions are that these pilot courses will
as models for other such tree-training
ams in the future. □



# craftsmen of curve lake





## these Indians are paddling their own canoe to independence

The mellow light of the Ducks-fly-up (September) Moon flooded Buckhorn Lake and bushland, inspiring an obbligato of sounds complimentary to the mood of the middle night.

A pair of whip-poor-wills trilled an off-beat cadence in an alder thicket. Night-feeding carp splashed in the shallows of the wild rice marsh. A loon, warning of unsettled weather, yodelled far off. And crickets chirped underfoot in the dead, frosty grass.

Although it was late, lights showed in many of the homes up and down the main road of the Curve Lake Indian Reserve, 25 miles northwest of Peterborough.

"The late-late show?" I asked Chief Dalton Jacobs standing beside me on the garden path.

The chief glanced at the dial of his luminous wrist watch.

"Well yes, and no. The folks may be watching television with one eye but they'll be working at some handicraft with the other," he smiled. "Our people are pretty industrious, especially near the end of the month when the bills come due."

So industrious are the Ojibway Indians of Curve Lake at making handicrafts, the 100-odd families are able to add a substantial supplementary income to wages gained from seasonal employment in which a great many of them are engaged.

The combined incomes have created well-being where poverty was perennial. "Welfare payments have been reduced to the lowest figure in years," boasts Band relief officer, Mrs. Gordon Taylor.

The brighter economic skies being enjoyed by part-time housekeepers, domestics, fishing guides, construction workers and students are due in large measure to their capitalizing on the inborn know-how of fashioning handicrafts from native materials.

This skill, combined with the shrewd business sense of Band councillor Clifford Whetung and his wife, Eleanor, has grown since 1959 into a private handicrafts business that grosses an estimated $50,000 a year. *Ojibwacraft* label has become a t trade mark in gift shops where quality chandise is sold in Canada, the no United States, England, Germany and Sw

And the range of products beggars de tion. There are tanned deer, moose and hide moccasins; dress gloves and han beaded and fringed shirts, jackets and fanciful oil paintings on whole hides.

Dolls are popular and there are leathe feather war bonnets and head bands; ash splint shopping baskets and hampers cupine quill-decorated birch bark baske

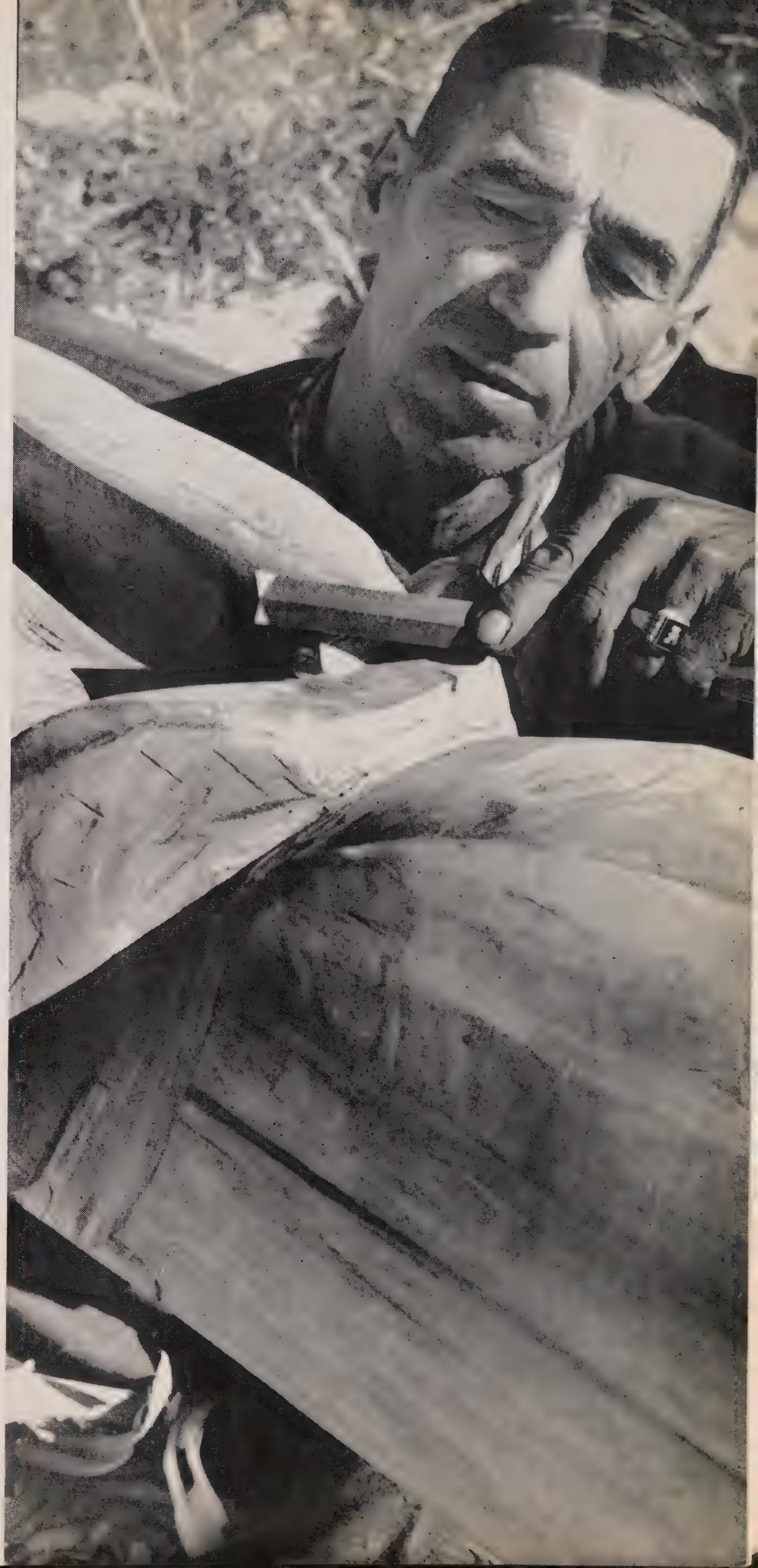
Carved wooden paddles are to be foun a wide range of decorative wooden piece include totem poles from six inches to 1 tall — all of it legitimate Indian Oj craftsmanship.

It is sold both wholesale and retail b through jobbers. Among the customers federal handicraft sales pool in Ottawa.

So varied and voluminous has bee

*These happy, industrious Curve Lake people are shown with the work they enjoy. From left are basket-maker Maidi Irons; Reg Muskrat with some of his tom-toms; Mrs. Mary Johnson who, at 95, does intricate quill work; and Austin McCue, master carver and totem pole expert.*





ɪe Lake output during the last few years
ʃproduction began spilling out of home
cɔns, living rooms and unoccupied cabins.
ɛmall, cluttered display shop simply could
tɔpe with the flow and most of the activi-
ʃwere recently moved into one of the
nomest log factory-showrooms in Ontario.
Tɪs guildhall of the Ojibways is an enter-
sunique in the category of Indian business
aɪishments in Canada.

Tɔ 40 by 60-foot building is itself an
aɔle of Curve Lake craftsmanship. Most
tl builders were amateurs and much of the
o was voluntary. Walls were fashioned
mwhite cedar logs cut on the reserve tim-
lɜd. A massive fieldstone fireplace high-
ɪt the fascinating interior and the scissor-
ssɪ roof beams are covered with thick red
aɪshakes.

Tɪ financial structure of the enterprise is
soɔd as the building housing it. Two-thirds
nɛ by Clifford and Eleanor Whetung, the
irɪs has an outstanding balance which is
urɛteed by members of the Curve Lake





Band from their capital account in O with the approval of the Indian Affairs B It's both a private enterprise and a co- tive free from government administratio control. Initial costs are expected to be in 10 years.

The main floor of the craft centre is re for display space for finished crafts. Sho storerooms for both raw materials and fi work are in the basement. Electric r heating supplies the comfort.

While many Curve Lake handicrafte continue to produce small, tedious work in their homes, the only mass productio moccasins, are made in the new quart is their most important and profitable c

Under the sharp eyes and deft han forewomen Hazel McCue and Inez Kno many piece-work operations are asse and packaged at a current rate of about pairs a year.

Named after family totems of the women; the Nis-na-ba and Wab-gog pa are made from tanned cowhide and the W sha-shi from deerskin. The three distinct come in plain or beaded vamps and cu

More limited but most spectacular craftwork is totem pole carving. Artist McCue fills orders for the craft centre a as supplying his own growing list of cust His pieces go to Boy Scout and Girl camp grounds and council halls, and demand as decorative pieces for motels, r private cottages and rumpus rooms. For sion, Mr. McCue carves duck decoys select few customers.

Also serving the community enterpri the older people who supply rolls of birc coils of white ash splints to the basketm and porcupine carcases — about 150 — for decorative quill material. Wom specialists in supplying sweet grass and native dye stuff materials.

Confident of the future, Eleanor W predicts nothing but steady growth f unique enterprise. She envisions a still range of products.

"Pottery making and weaving are hereditary and natural," she says, and with pride to examples of the awakenin spirit in heretofore uninterested tribesm

The eager, industrious Ojibways of Lake are fulfilling an observation made time ago by Chief Dalton Jacobs, hin foreman in a large industrial plant.

"We Indians have to create employm the reserve to get away from primitive standards and values while still retaini identity. The private co-operative now ing at Curve Lake proves the point; t paternalism the Indian receives from the better it is for him."

*Colorful totem poles await shipment to customers across province. Co-owners of Curve Lake enterprise, Eleanor and Cliff Whetung, display handicraft outside new building.*

## Torontonians are working and living higher electrically

# oronto is growing up

It's room at the top only in Toronto. Hemmed in by Lake Ontario to the south, and by bordering municipalities, Toronto is at the stage where nearly every available lot is occupied. So building developers have taken the only course open, and that's up. Towering office and apartment buildings are becoming so commonplace that blase Torontonians, gazing at their changing skyline, ask only — "How many storeys is this one?"

Destined to become a skyscraper metropolis, Toronto is experiencing rapid redevelopment spasms quite unlike many North American cities which are able to progress in a more sprawling and leisurely manner. It's now you see it and now you don't where familiar landmarks are concerned and land costs in the downtown core average from $100 to $150 per square foot. Even so, costs seem to be a secondary consideration to developers. The main factor is land availability.

In the past 10 years, more than 10,000 buildings, the equivalent of a good size city, have been razed to make way for the new. Upwards of 18,000 structures are expected to disintegrate under the wrecking bars in the next decade.

Cavities created by demolition are quickly filled.

Estimates indicate that about $1,100,000,000 worth of new construction, (more than in the previous 40 years) has been carried out in the last 10 years. Educated guesses run as high as $2 billion for the decade ahead.

And while electricity is the heart beat of all modern urban development, the extent of its use varies widely in a competitive energy market. Toronto Hydro is working hard to keep it predominant as the city's face-lifting progresses.

Known building projects in the city for 1966 and 1967 are expected to represent some 90,000 kilowatts of electrical load — more than the peak requirements of a city the size of



Kingston. Toronto's peak during 1965 was 710,558 kilowatts and it is expected to reach 750,000 kilowatts this year.

One project, which is hooked up to a big steam heating network operated by Toronto Hydro, is the $125 million Toronto-Dominion Bank complex. It will include the tallest building in Canada, a 56-storey tower and interconnecting mall which will use 17,000 kilowatts for lighting and motors alone. Toronto Hydro estimates that the entire scheme including present construction of a second tower, will represent a load in excess of 30,000 kilowatts.

Simpson's new Tower, at Bay and Queen streets, is on its way up to 32 storeys and represents an estimated load of over 6,000 kilowatts. This tower will also employ steam heat from the steam complex.

All-electric office and apartment buildings are also gaining wide acceptance — a trend for which Toronto Hydro can take a good share of the credit. In office buildings, many developers are employing the modern "heat with light" concept, using high-level lighting and a heat pump. One such development is the Professional Building on Edward Street, where Ontario Hydro's Sales Division and Advertising Department occupy rented quarters. Here, even the kitchens in the basement restaurant are all-electric.

Perhaps the effectiveness of this installation influenced the developers of the 27-storey Richmond-Adelaide Centre which also employs the heat with light concept throughout the building.

Recessed lighting fixtures, providing illumination as high as 120 foot candles per square foot, plus solar radiation and the body heat of tenants will help keep the building at a comfortable warmth level this winter. A heat pump system is used as a transfer device to redistribute heat or to store it for later use. This skyscraper opened in July and it will house 7,000 office workers. It will also feature three all-electric restaurants feeding an estimated 10,000 persons a day.

In the downtown core of Toronto, the scene is one of constant razing and rising. Another electrically heated office building which is going up is the 18-storey Canada Trust, Huron and Erie headquarters at Yonge and Adelaide, with an estimated load of 2,300 kilowatts.

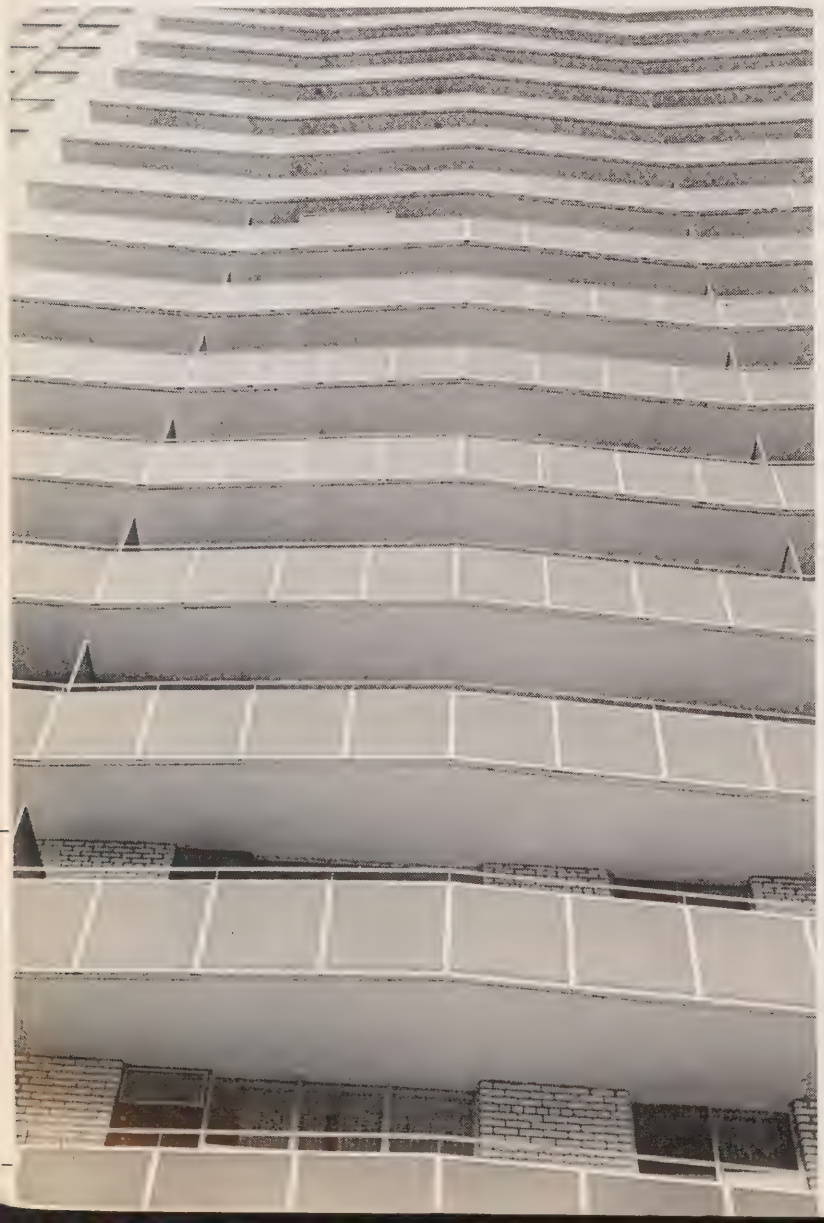
Uptown, the 19-storey Imperial Life Assurance Building will be all-electric. Other all-electric commercial buildings underway include a hotel and a senior citizens' home.

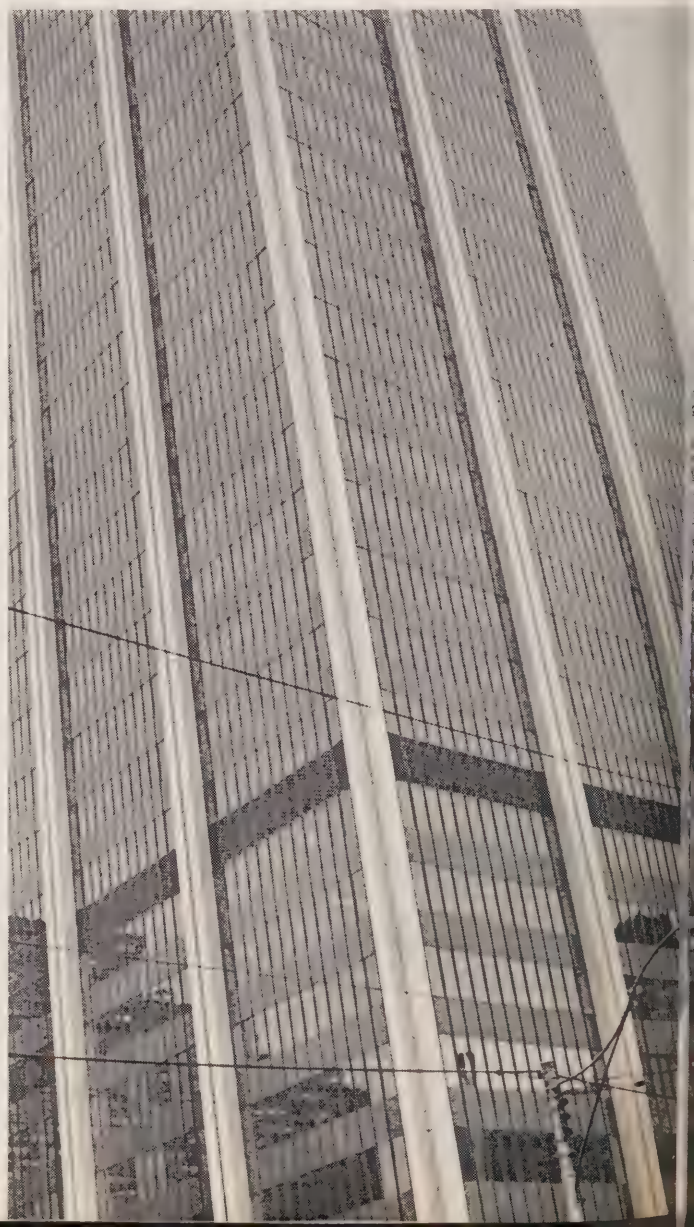
And judging by the number of new a ment buildings stabbing the sky, Toronto are also living higher these days. The cit 40 per cent of all apartment units in the M politan area. Toronto Hydro is counting h ly on this market for much of its future gr — a promising field as more and mor velopers are coming to appreciate the omies of electric heat for their multi buildings.

In fact, the utility expects to sell almo many kilowatt-hours of electricity each y the 5,000-suite St. James Town apartme velopment, when complete, as it wou 20,000 suites heated by other means. A electric city within a city, this midtown plex will have a peak load of over 18,000 watts.

The largest all-electric apartment proj Canada, the St. James Town developmer have 10 high-rise buildings open to tena 1968. Three buildings, one 32 storey two of 24 storeys are under construction a total of 1,500 suites to be availabl rental by the end of the year.

Each suite will have radiant ceiling with individual thermostat control in room. Baseboard heating units will be u





athrooms. Heat exchangers will be located on e roofs to recover approximately 80 per cent the heat exhausted from apartment suites. hrough a transfer process, this heat, mixed ith incoming fresh air, is used to pressurize ilding corridors.

Off-peak domestic hot water heating is a itical factor in the over-all economy of the ildings. The water will be overheated for rage and lowered to standard temperature r redistribution. Ramps to the underground rages will be electrically heated, but not the rages themselves as these must be kept well ntilated.

In addition to the extra comfort and conience of all-electric living enjoyed by the lants, the city will benefit from the absence chimneys. St. James Town will add nothing air pollution. All garbage will be dumped tenants down chutes terminating in a chilled lement room. From here, all refuse will be ted out of the building for disposal.

Another high-rise, all-electric apartment depment, Dover Square, is under construcn in midtown Toronto with one of three ldings already renting. Dover Square will e 844 suites available to prospective tens next spring. Again, each suite features individual temperature control in each room with the use of ceiling cable.

"I have been surprised at the renting potential that electric heating offers," says Barbara Buksner, rental agent for the Dover Square apartments. "It seems that when people discover there is no hydro bill to pay, they get down to talking about leases."

The Dover Square buildings, like all large total electric apartments, are bulk metered with the electricity bill included in the rent.

A prestige project, the complex will include an indoor swimming pool, sauna and gym. Even the laundry rooms will have piped-in hi-fi music to wash by. Here, too, cleanliness will be assured by the absence of any combustion.

In close touch with all of these projects is the Consumer Service Division of Toronto Hydro. Five men in the Industrial Power Service section are responsible for the direct selling of electric space heating. This group keeps tabs on every new development in the city and, in many cases, has been able to influence builders and owners in favor of electricity.

Toronto Hydro finds that many of the large developers, from long familiarity, tend to consider only gas or oil heating systems, while the smaller owner is more readily influenced to go all-electric. Capital expense involved in the construction of large apartment buildings is so high that Toronto Hydro must convince owners of the very substantial advantages of electric heating. However, the amounts of all-electric apartment living going on these days attests to their success.

There have been some changes since one noted author had this to say of Toronto:

"The town itself is full of life and motion, bustle, business and improvement. The streets are well paved and lighted with gas; the houses are large and good, the shops excellent, many of them having a display of goods in their windows such as may be seen in thriving towns in England, and some which would do no discredit to the Metropolis itself."

The gas lights have gone, of course, but the bustle, business and improvement continue — much as they were described above by Charles Dickens, in 1842. □

*All-electric skyscrapers stab Toronto skyline. Watching transformer installation at St. James Town project, from left, are developer Julius Hanson and Toronto Hydro officials Frederick Gardiner, John McMechan and Harry Hyde. Scrawled message "this wall stays" symbolizes tempo of construction.*



# degrees by degree

**with the emphasis on education, grandpa is vying with junior for academic cre**

by LES DOBSON

Lights burn late on the campus these nights. Professors turn up for work around six o'clock and evening parking space is about as rare as a doctorate in Chinese philosophy.

Why all the activity? Everyone from office managers to stenographers and from housewives to salesmen is riding a wave of extra-curricula enthusiasm in earnest pursuit of cap and gown.

Obtaining a degree by degrees is a laborious process and many are the reasons for returning to the classrooms after five, 10, perhaps 20 years' absence.

Some extension students are working for promotion, others are studying because they like it or because their children are at university. Still more, perhaps, are merely after the right to add the cryptographical mystique of BA after their names. University authorities themselves are too busy to probe deeply into the causes, but undoubtedly a major factor is that employers are demanding higher and higher educational standards.

It may be, too, that Canada's boom in extension studies is partially inspired by the growing need for those working in technology to upgrade their knowledge every few years.

Russell R. O'Neill, acting dean of engineering at the University of California, says that today's engineering graduate faces the prospect that half his knowledge will be obsolete 10 years from now, while half of what the engineer of 1976 will need to know has yet to be discovered.

Some faculty members at University of California Extension, one of the biggest educational operations in the world, go even further. They propose issuing diplomas that will "disintegrate" after ten years.

Although the problem is most marked in the technological field, it is by no means restricted to it.

"Almost no one can get a good job without at least senior matriculation these days," says G. H. Boyes, director of extension at the University of Toronto, "and people after a higher position require training beyond matriculation."

More and more employers are insisting upon hiring graduates. Ontario, for example, intends



*More and more adults are returning to the classroom.*

estrict the teaching profession to degree-
lers within a very few years, hence the
mble among elementary school teachers to
credits in their spare time.

eachers are also offered generous pay in-
ives for each year of university study they
plete and almost half the seats at U of T
ures are filled by men and women who
ch classroom roles in their off-duty hours.

niversity study was never intended to be
, and can be particularly trying after the
ses of a seven or eight-hour stint at work.
this didn't prevent 45,000 part-time stu-
s enrolling in Canadian universities in the
-64 academic year and a further 7,500
ing by correspondence.

ot all of them were working towards a de-
although most universities now offer part-
s degree programs.

king several evening courses a week,
ner and winter, the dedicated can earn
general BA degree in four or five years.
s prefer to plod along at one subject a
Some even become grandparents before
graduate.

st to the student is around $100 a course
say nothing of the loss of family and
life while attending lectures and com-
g home assignments. Two recent students
of T Extension took their three weeks'
on in half days so they could attend
ng lectures at summer school.

ognition of such effort is minimal. Un-
s daytime counterpart, the extension stu-
loes not qualify for government loans,
gh many enlightened organizations —
o Hydro is one of them — provide vary-
ancial assistance.

lents agree, though, that time is an even
consideration than dollars. It's difficult
narried man to find time for family and
still devote six to 12 hours a week to
bject.

r costs are more tangible and Ontario's
ment of University Affairs puts last
estimated bill for provincially-assisted
ities at more than $2,000 each full or
-the student.

T Extension has granted degrees to more than 3,000 students since its formation in 1907. Last year it catered to more than 5,000 part-time undergraduates, offering credit courses leading to a BA degree , the first year of a B.SC. in nursing and the first year of a general course in science.

It also offers an astonishing assortment of non-credit courses, issuing certificates in criminology, business and in public administration. As for the rest, you can take your pick. Maybe subjects such as the Chemistry of Organic Polymers will tickle your palate, or you may have a yen for Choral Singing or Exercises for Health.

York University, another pillar of night-time study in Ontario, is trying a different approach. Although first courses for part-time students were offered by the Joseph E. Atkinson College as recently as 1962, the extension program is already a resounding success. Expected enrolment this fall is 2,800 undergraduates.

"One of the reasons for York's popularity is that every course offered at Atkinson College counts towards the BA degree," says the director of community relations, Ralph Blackmore.

York is busy transferring much of its activity from Toronto's Glendon College to a 475-acre campus on the northern boundary of the metropolis. Yet trudging across construction sites and sitting in uncompleted lecture halls has done little to dampen the enthusiasm of its students.

York has also set a precedent in the field of extension studies by becoming the first Canadian university to appoint a full-time faculty for its part-time graduates. U of T prefers a series of cross-appointments, in which some staff do extra work at nights while others lecture in the evenings as part of their normal work load.

It was the beep, beep of the first sputniks which emphasized the need for higher education more urgently than ever before. If technology is leaping ahead, then the arts must provide a balance and follow suit.

Automation and improved social conditions are increasing our leisure time. The educators urge us to use it well. □

## hydro sticks with the books

Recognizing the importance of continuing education, Ontario Hydro has long offered financial assistance to employees engaged in extramural studies.

A basic consideration is the extent to which the course has a bearing on the applicant's work. Awards are made at divisional or regional level and the amount of assistance varies from about 25 per cent to 100 per cent of tuition fees.

Hydro's part-time students are taking anything from their BA degree and business administration to welding and refrigeration. Some travel from Barrie to the University of Toronto — others from Toronto to McMaster University at Hamilton. Many stay at home, studying by correspondence.

One who is particularly concerned about the need for continuing education, particularly in the technological field, is Hydro's general manager, Dr. J. M. Hambley.

Dr. Hambley, who is president of the Engineering Institute of Canada, told a joint engineering-management conference in Washington last month that there will be major problems arising from future manpower adjustments.

"There will be many changes in job requirements and certainly shifts in engineering employment, for which we must be prepared in advance," he said.

"We must seek to ensure that our primary source of engineering manpower — the formal educational system — is aware of these rapidly changing needs and adjusts appropriately to them so that it can maintain its maximum quality and relevance."

Dr. Hambley added: "The rate at which technological change takes place is governed largely by the amount and direction of research and development in a country, the inflow of new technology from other countries and expenditures on education and training.

"In passing, I stress that the words 'education' and 'training' are not limited to the instruction given to young people as students. They include the equally important continuing education and training of those already employed." □





# vertical transportation

by JOHN F. SIMPSON

**you won't find this method of getting around played up in the travel brochures — but it's fast, safe and all-electric**

Automation has practically taken over one of the safest, cheapest and most silent forms of transportation in the world.

Fantastic numbers of these vehicles zip smoothly along every moment of the day, easily outclimbing many piston-engined aircraft. Acccording to statistics, only one person dies every 420 million passenger miles.

Guessed yet?

You probably rode one to work today. Chances are there wasn't a soul at the controls.

Still puzzled?

We're talking about that taken-for-granted, push-buttoned, air-conditioned, electrically-operated and sometimes music-filled box of tricks, the overworked and literally down-to-earth elevator.

Today's sophisticated yo-yos are a far cry from the basket-like contraptions of the Roman Empire (fifth floor, centurions' helmets, togas. Chariots in the basement, sir). Not until the early 1800s did the first really practical models appear and only with the advent of electric power did they begin to flourish.

Without the motive-force of electricity, the modern elevator is rendered pathetically immobile in the gloomy vacuity of multi-storeyed space. And although economical to run, Ontario's elevator population of 14,000-odd vehicles would account for a load in the neighborhood of 100,000-kilowatts were they operated all at once.

The first self-operated elevator for a Canadian office building was installed, with some trepidation, in Montreal just 16 years ago. The building owner and the elevator manufacturer expected a public outcry, but the storm never came. Instead, passengers accepted this small token of automation uncritically.

Less than a quarter of Ontario's passenger elevators are now manually operated and less than five per cent of new elevators require an attendant.

Modern elevators come in round, square or rectangular-shaped cabs that operate either in a shaft or on the outside wall of a building at speeds from 100 to 1,400 feet a minute. Doors

usually open and close automatically.

Building owners can shop at any one of Canada's 40 elevator companies. Contractors will design and build almost any type of cab the customer wants, from peek-a-boo transparent walls — a Hamilton company has built this type for Quebec's exhibit at Expo '67 — to reversible interior panels or designs etched on hoistway doors. Certainly, the interior of the modern, music-filled elevator is a far cry from the crawling open platform used at the turn of the century.

Speeds have altered, too. But F. S. Harwood, chief engineer of Turnbull Elevator division of Dover Corporation (Canada) Ltd., told us that manufacturers are definitely not entering a horsepower race.

"A high-speed elevator is meant to be used in very high buildings," says Mr. Harwood, "but only in the past six years have four Canadian buildings risen higher than 40 storeys (Montreal's Canadian Imperial Bank of Commerce, the Place Ville-Marie and the Place Victoria Buildings and Toronto's Toronto-Dominion Centre).

"It takes an elevator which travels at 1,000 feet a minute five to six floors of uninterrupted motion to attain maximum speed, and an equal distance to stop. Consequently, elevator contractors are more concerned with the ability of modern systems to handle traffic than in trying for speeds which are uneconomical for most buildings."

Development of the elevator gained momentum in the early 1800s with the introduction in Europe of the hydraulic plunger type. The car was attached to a vertical plunger raised or lowered by forcing water into a cylinder.

In America, elevator development dates from a steam-driven device built around 1850 in New York to carry freight. Credit for the first electrically-operated elevator goes to a German, Werner Siemens, in 1880.

In 1902, the Otis Elevator Company made a major breakthrough with the safe, gearless design still in use today. Modern elevators have an electric motor directly connected to a sheave around which the hoist ropes are wrapped. One end of the rope is attached to the car, the other end to a counterweight. Safety devices include governors to prevent overspeed and automatic brakes which clamp on rails.

Sixty years ago, most cab frames were made of wood and the quickest way for a passenger to lose a toe was to stand too close to the open edge since few elevators, if any, were equipped with doors. Today, 25 elevator inspectors of the Ontario Department of Labour check all installations in the province for safety before issuing a permit.

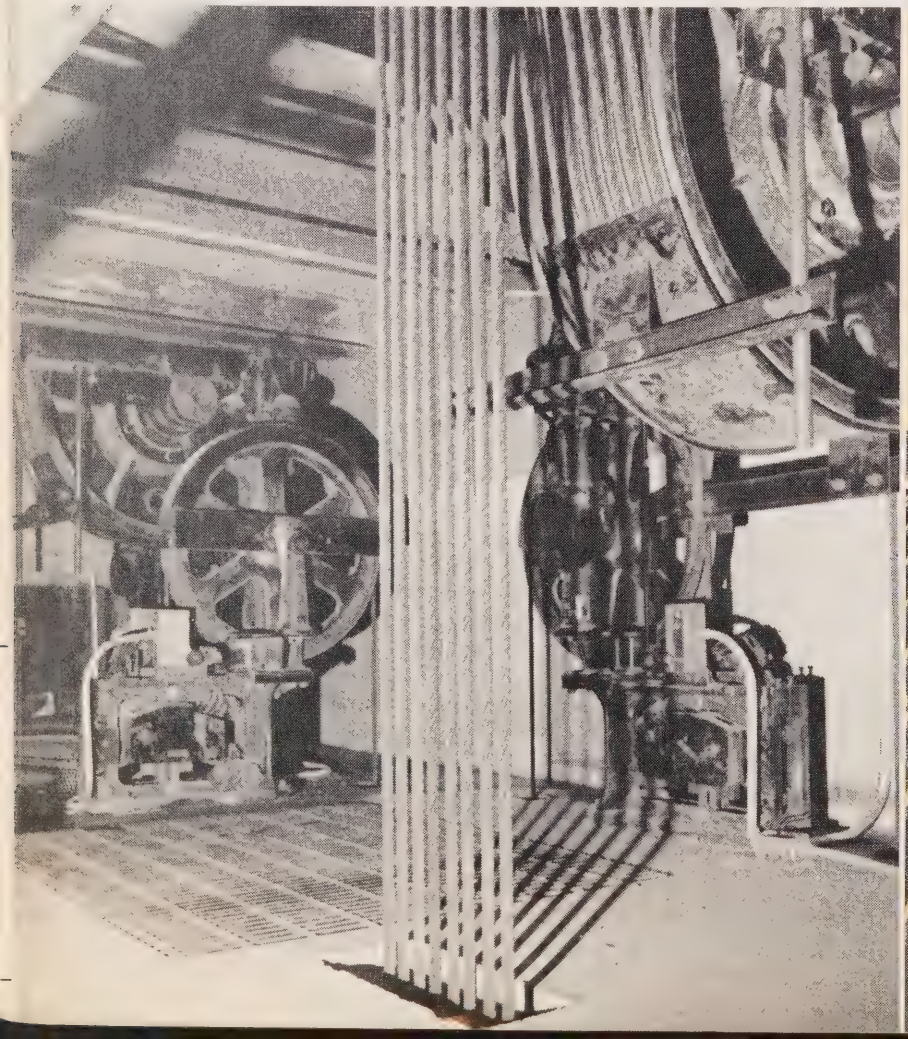
Fred Ehmke, chief inspector of the department, recently said: "Before the Elevators and Lifts Act was introduced in 1954, we experienced as many as 11 deaths each year through accidents in which elevators were involved. However, as the department added more and made more inspections, passenger fa ties decreased and some years now pass v out a single fatality."

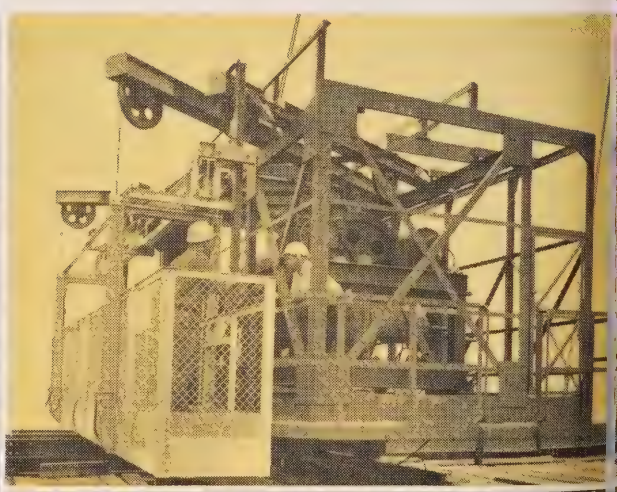
In Canada's tallest building, the 56-st Toronto-Dominion Centre, still under struction, an elevator operator will be as ra an abacus in a computer factory. Each o Toronto-Dominion's 40 automatic eleva will be controlled by a supervisory comp which adjusts the schedule of cars to rus slow periods. Sensing devices at each floor in every car will transmit data on calls, senger loads and door operations to the su visory computer, which will evaluate predict workloads and dispatch cars.

Installation of the 40 elevators will rec 1,065 miles of rubber-covered wire, 61 m of wire rope and 14 miles of steel guide r It will cost a little more than a cent's wort electricity to move any one of the 16-mile hour cars from lobby to 56th floor.

Most elevators in large office or apartm buildings have six wire ropes to hoist each At Ontario Hydro's 16-storey Head Office four 600-feet-a-minute elevators are no ex tion, although one rope is capable of liftin elevator.

John McDonald, Hydro's elevator patcher, has calculated that approxim 4,500 people ride the elevators each day Monday to Thursday, but on Fridays the c goes up to 5,000. Installed long before a







tion, each of the four elevators has logged average of 120,000 miles since 1940.

An American engineer has recently stated t an elevator with modern controls could erate beyond 3,000 feet a minute — if ssengers could withstand the high speeds. t few buildings could accommodate such an vator and even fewer people would want to e it. Manufacturers, therefore, are concen- ing on making the elevator more versatile. The bright yellow cabs looking a little like ce capsules or beetles, depending upon your gination, at the International Centre at gara Falls, are the latest in elevator versa- y. The three cars operate on the outside of 520-foot high Skylon, an observation and aurant tower above the centre. Each car is able of lifting 32 passengers to the top in than a minute. These outside elevators mber among half a dozen such installations ughout the world.

esearch engineers are continually adding gadgets to the elevator. One such device pre-recorded voice which informs passen- of the car's location and direction of el. As the car slows for a stop, the names epartments on that floor are announced. manufacturer claims this system fulfills the of an alert operator.

n invention still under development is the ronic detector system that will take the y out of missing an elevator just by sec- . Electronic detectors will sense people approaching the hall button and automatically register the call. If an elevator is approaching the floor, it will stop before the button is touched. However, if the prospective passenger decides not to take the elevator and walks away, the departure would be detected and the call automatically cancelled.

Through automation, the elevator has become a faster, more efficient and safer means of vertical transportation than was ever dreamed possible 50 years ago. The modern elevator owes much to engineering and electronic know-how . . . and much to a reliable supply of electric power. □

## also on the way up

Since the end of World War II, another device has found increasing use in the field of "almost vertical" transportation . . . the escalator.

As far back as 1859, Nathan Ames, of Saugus, Massachusetts, took out a patent for "a new and useful improvement in stairs, which I call revolving stairs". But his design was a crude forerunner of the modern escalator.

Today's average escalator is driven by a 15 horsepower electric motor and will handle between 5,000 and 8,000 passengers an hour, depending on the width of the steps. Speeds range from 90 to 120 feet a minute. Escalators as long as 160 feet are now on the drawing board.

Over short distances, escalators have certain advantages over the elevator. They waste no time loading, starting, stopping and unloading. In department stores they increase sales volume, making off-street floors easily available and reducing customer fatigue by eliminating waiting and crowding.

Recent escalator developments include installations with see-through balustrades of armored glass. First introduced in Japan, these give a spacious, airy touch to stores and shopping centres.

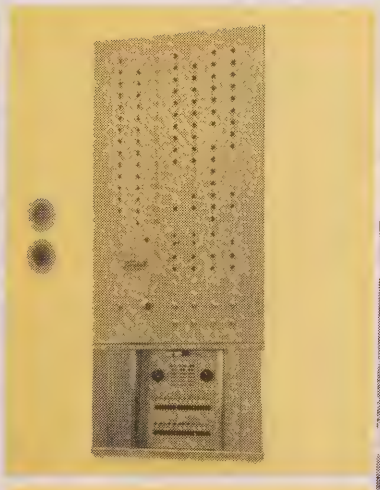
Like elevators, the escalator has a full complement of safety devices, which include guards against excessive speed, accidental reversal and step chain or handrail failure.

Another interesting application of machinery for vertical travel is the power scaffold — a mechanical platform for cleaning the outside of large air-conditioned buildings. Such devices are raised or lowered by roof-mounted hoists controlled from the platform by push button.

To move the equipment from side to side, the cleaners must first raise the platform to the roof where the hoisting mechanism runs on a track around the perimeter of the building.

The largest power scaffold in Canada is at the Toronto-Dominion Centre. About 3,000 feet of cable will support the three-man, radio-controlled platform and it will take maintenance crews an estimated two weeks to clean the building's 7,500 windows. □









*Getting up in the world is easy today thanks to equipment like this. Shown are power scaffolds for window cleaning, massive elevator hoists and latest in escalators at Simpson's Toronto store. Previous page: outside elevator on wall of Skylon Tower, Niagara Falls, Ontario.*

# hydro commissioners in session

**District meetings of the Ontario Municipal Electric Association are in full swing across the province. Subjects under discussion range from public relations to possible changes in the administration of local Hydro affairs. Some of the important issues are reported on these pages.**

## the president calls for togetherness

A call for closer ties and improved communications among the three groups representing Hydro in Ontario was the main theme of the address by OMEA President J. E. Wilson at the annual convention of the Georgian Bay Municipal Electric Association and at District meetings elsewhere in the province.

He said the need for a closer relationship between the OMEA and the AMEU had been discussed at a summer meeting of the presidents and senior officers of the two associations. As a result, he said, the AMEU had formed an inter-association committee to act with a similar group in the OMEA and that ways and means were being investigated to promote inter-action and co-operation. He thought a closer relationship between personnel of both associations would react to the benefit of Hydro throughout the province.

Another step toward improved communication cited by Dr. Wilson was a meeting arranged earlier in the year by Ontario Hydro Chairman George E. Gathercole at which OMEA and AMEU officials sat in with the entire Ontario Hydro Commission, the general manager and the assistant general managers.

"At this meeting," he said, "there was a frank discussion on policy matters, an endeavor for the Hydro Family to improve communications and to know and understand the problems of the three co-ordinating groups."

The OMEA president also referred to the closer liaison promoted by joint committees of the three Hydro groups such as the Advertising and Sales Co-ordinating Committee. He felt this helped instil enthusiasm in all whose job it was to sell kilowatt-hours.

He had this to say about selling:

"I believe that sales promotion requires our unstinting support. It is a function of every public utility. The use of an ever-increasing number of kilowatt-hours is essential if retail rates are to be kept down. As in any other business, sales volume is required in order to keep unit costs down. Hydro needs salesmen to-day. It needs them in every municipality in the province. These salesmen should include every OMEA member."

Dr. Wilson also informed delegates that there had been a change in the procedure for presenting long service awards to commissioners with over 15 years of service. He said it was felt that one of the strongest areas of Hydro was in the devotion of the men in public life to their duties as local commissioners and that the proper place to make the awards was at their respective district meetings. Mr. Gathercole had consented to carry on the tradition whereby the presentations were made by the chairman of Ontario Hydro. □

## where have we gone wrong?

**An outsider with considerable insight talks frankly about the municipal utility system in Ontario.**

Invited to tell delegates to the Georgian Bay Municipal Electric Association convention of any weakness he thought might exist in the PUC system in Ontario, Allan E. Reuter, MPP, Waterloo South, earned the plaudits of the

*This year, OMEA long service awards were made at the district meetings. Hydro Chairman George E. Gathercole presents John B. Erdman with a scroll for 16 years' service as a Walkerton commissioner.*



Muskoka meeting with his frank apprais

A former member of the Select Comr on the Municipal Act, Mr. Reuter expl why he thought the Committee had put its proposition to repeal the Public Utilitie and turn the functions of the public ut commissions over to local councils.

He pointed out that, in analysing the ber of local boards, commissions, specia pose bodies and committees, the Select mittee found that there was a great ne restore the local council to its original po of "dignity, authority, responsibility and r respect." He said the excessive use of prov statutes had led to the committee's ge recommendation.

"I suggest", Mr. Reuter said, "tha underlying reason that the Select Comr made their recommendations regarding t peal of the Public Utilities Act and the r of the responsibility of the functions public utilities commission to the local co is to be found in the gradual but cont weakening of the local council itself. I d believe that the committee intende especially single out public utilities cor sions; rather, that they included the PUC the many other ad hoc bodies operating be the control of the duly elected, represen and responsive public body — the council."

Mr. Reuter made it clear that he was i accord with the committee's recommend with regard to the Hydro commissions.

"The provision of electricity, for its uses, is so important to the social and ecor well-being of the public", he said, "tha entire function is quite properly carried o a special body set up by the democratic

*These officers will head the Georgian Bay MEA for the new season. From left are: David Kennedy, Kincardine; W. R. Tomlinson, Port Elgin; Col. A. A. Kennedy, Owen Sound; E. R. Alexander, Barrie; W. E. Theaker, Paisley; Norval Orser, Orillia; Tom Stevenson, Chesley, first vice-president; J. J. Cross, Huntsville, past president; H. J. Murphy, Barrie, secretary-treasurer; D. A. Watt, Orangeville, president; A. C. McAuley, Elmvale, 2nd vice-president.*



process. I do not believe that a local coun- would be able to allot sufficient time or to ote special attention to Hydro matters any e so than they could adequately handle duties and responsibilities of the local ool boards."

nother reason cited by Mr. Reuter in de- e of the status quo in municipal Hydro inistration was the tendency he thought ld develop to regard the Hydro operation source of "profit-revenue" for use in gen- municipal operations.

he speaker emphasized that the Select mittee could only recommend. "It is my belief", he said, "that the Department of icipal Affairs is highly unlikely to adopt controversial proposal of which I have en today."

r. Reuter thought the greatest weakness in PUC system lay in the great variety of ions performed. He said commissions s the province were handling a total of fferent functions in addition to electricity water. He thought this "proliferation of ions" assumed by the PUCs had obscured real significance and indicated a lack of nsibility on the part of councils.

is my opinion," he said, "that the public es commissions would strengthen their on by resisting the acceptance of respon- y for all but a few municipal functions than electricity."

other weakness singled out by the speaker oor public relations. He called for greater ity through the press of PUC meetings wer occasions when commissioners meet d closed doors" to formulate policy and management.

summary, Mr. Reuter said: "You are performing a unique function and your responsibilities should be narrowed to a very few specific fields . . . you should strive for greater public information not only in respect to the proceedings of your meetings but in the general field of public education as to your specific role in the whole complex matter of municipal undertakings." □

## nuclear power will eventually predominate

**Ontario Hydro Chairman George E. Gathercole assured a joint meeting at Coniston of the Northland Municipal Electric Association and the Northeastern Region of the Association of Municipal Electrical Utilities that Hydro will continue to expand its nuclear power program.**

"We will proceed as rapidly as possible with the development of nuclear power and are confident that nuclear plants will be our main source of electric energy in this province," he said.

Mr. Gathercole added that a recent decision to build a further coal-burning power station in Southern Ontario would not affect Hydro's nuclear program.

"At this stage of our development, nuclear stations are essentially base-load plants while coal-burning stations can be operated for peaking. We need both base-load and peaking plants," he said.

Hydro already had a heavy nuclear involvement, said Mr. Gathercole. The Douglas Point and Pickering nuclear stations were committed to produce nearly 1,250,000 kilowatts of electric energy while Pickering could be expanded to provide a further 1,000,000 kilowatts.

A. B. Hayman, Ontario Hydro regional manager, told delegates that one of the year's highlights was the dramatic change in the uranium industry.

"A year ago," he said, "merchants and residents at Elliot Lake were filled with apprehension for the future. Now, optimism prevails. The uranium mines which continued production, wondering what the future would hold, are considering expansion. Considerable exploration is under way and more mines will probably be opened."

Mr. Hayman said that expansion in the pulp, paper and mining industries was expected to push the Northeast's power demands to nearly one million kilowatts — about double the present peak load, by 1971. Also adding to the load was the increased residential and commercial demand. □

## pr report card needs improving

**D. P. Cliff calls for better communications between utilities and their customers.**

Municipal utilities must keep their customers informed if the present system of Hydro commissions is to survive, D. P. Cliff warned District 3 OMEA delegates.

"It is not enough to merely supply efficient low-cost service then sit back in a warm glow of self-satisfaction. Our customers must know, must be told, about the job we are doing, and

*Elected to the District 3 OMEA executive, left to right, back row: G. Waghorn, Nipigon; G. A. Wilson, Port Arthur; Dr. J. E. Wilson, Barrie, honorary vice-president; Ontario Hydro Chairman George E. Gathercole, honorary president; L. E. Danis, Fort William. Front: W. A. Ferguson, Atikokan, 2nd vice-president; A. J. Marshall, Fort Frances, president; J. D. Phillips, Schreiber, past president.*



about the value of the service they receive," said Mr. Cliff, Ontario Hydro's 1st vice-chairman.

He said it was disheartening when regional studies recommended that local Hydro commissions be replaced by committees of council.

"Where have we failed?" he asked. "I suggest to you that perhaps we have allowed ourselves, in some instances, to be taken for granted."

A recent survey of attitudes towards Hydro in urban areas had revealed that 38 per cent of the people questioned thought the municipal utilities had done either a poor or only a fair job of keeping the public informed, the speaker said. Both the telephone and gas companies scored higher marks in this regard.

"If the people in our own communities are unaware of, or indifferent to, the record of Hydro, then we can hardly expect their support when the chips are down," he added.

"It seems to me that we have a dual responsibility: first, to provide a high standard of electric service to our customers at the lowest possible cost; second, to keep our customers informed about what we are doing.

"In the first category, we rate excellent marks. In the second, however, our report card is less than satisfactory," said Mr. Cliff.

Delegates agreed to the formation of a district public relations committee to improve communications with customers.

Earlier in the year, the OMEA executive had recommended the formation of public relations committees in all districts where none existed. The parent association has also established a PR committee, with M. J. Brian of Windsor as chairman, and its members will carry out liaison with the district groups. □

## therefore be it resolved that...

**District resolutions ranged from bad debts to administrative integration.**

"Be prepared" was the philosophy underlying a decision of District 2, OMEA to institute a study in the Georgian Bay District of possible economies and other advantages to be found in the integration of "certain functions of local Hydro commissions."

The study will also deal with any portions of Ontario Hydro's rural system which might be "economically integrated with one or more municipal Hydro commissions." Behind the decision was the commissioners' determination to provide top electrical service in an era of change in the theory of government at the municipal level.

Speaking in support of the resolution, its sponsor, W. R. Tomlinson, Q.C., chairman of Port Elgin Hydro, said: "I never believe in waiting to be forced into action on someone else's terms. This study should enable us to suggest changes that will be beneficial to the people we serve."

Also passed at the District 2 meeting in Muskoka were resolutions urging the OMEA Government Legislation Committee to recommend a procedure to be followed by the utilities with regard to customers who move without paying their Hydro bills; and the need for providing municipal Hydro commissioners and other PUC personnel with identity cards.

Because of the extra cost of changing from overhead to underground distribution, a resolution was passed at the annual meeting of District 9, in Coniston, drawing attenti a pertinent section of the Local Improve Act.

The resolution suggested that every effo made to publicize the existence of the st under which the cost of changing over is l by those taxpayers with property frontir the streets affected.

W. E. Edwards of Sudbury objected t principle, saying that underground wirin to the benefit of everyone.

"This resolution is against the entire co that Hydro is for the town as a whole. I it will cause the Hydro Commission som barrassment," he said.

When challenged, N. B. McCubbin of N Bay said his commission made the propos cause they felt not enough municipalities aware of the statute's existence.

Another District 9 resolution calle legislation to change the Income Tax A grant Hydro commissioners, and others concessions on expense allowances simil those enjoyed by mayors, controllers and elected civic officials.

A Capreol resolution asked that munic ties in District 9, who used Hydro powe were not presently members of the associ be invited to attend future meetings as voting delegates.

Sudbury originated two resolutions re to the home economics classroom equip program. One proposed that the appl manufacturer, the school board and H make equal financial contributions. The advocated that the appliances be replac more frequently than every two years.

Finally, the Coniston meeting called reciprocal agreement between Ontario H

*ewly-elected District 9 OMEA officers, left to right, ck row: A. W. Cooke, West Ferris, secretary-asurer; H. A. Prescott, Capreol, 3rd vice-president; A. Smith, Chapleau; Roland Marleau, Sturgeon lls; D. G. Hugill, Sault Ste. Marie, 1st vice-president. ont: J. L. Boulley, Hearst; H. B. McCubbin, rth Bay, president; R. M. Duncan, Coniston, d vice-president; J. F. Boucher, Espanola.*



the municipalities to cover the transfer of efits of employees moving to or from the ties and Ontario Hydro. □

## rthwest is on e move

**ply considerations are governed tly by industry.**

ning industrial demands are expected to Northwestern Ontario's consumption of ric power to an unprecedented height year, Ontario Hydro Regional Manager I. gimundson said at Nipigon.

e told District 3 OMEA delegates that ates called for a peak of 544,000 kilo- this year, rising to 625,000 kilowatts in .

meet increased demands, the Thunder coal-burning power station at Fort Wil- will be placed in service this winter. An dional 22,000 kilowatts of stand-by power be provided by combustion turbine units installed next year at the Thunder Bay .

N. Ingimundson added that most of the h in industrial load was due to new plants d xtensions in mining, chemical and pulp d aper companies.

irect industrial loads represent approxi- y 70 per cent of the total demand in this i and the rate of increase varies widely n year to year whereas the municipal utili- s d our retail system produce a relatively f m growth," he said.

onsequently, the direct industrial load, e its magnitude and rapid change, is the predominant factor in our supply considerations."

Over the next three or four years, the municipal utilities and Ontario Hydro's retail customers combined are expected to increase their demands by about 10,000 kilowatts a year, Mr. Ingimundson said.

He said that 189 electrically-heated homes were built last year, bringing the total for the region to 2,893. Progress in the electric heating of schools, churches, motels and office buildings was also very encouraging.

"I would like to say that the increasing interest and support shown by municipal utility commissioners in this region in our combined marketing plans and recognition of the important role that sales promotion must play in the achievement of our objective of rates at the lowest possible level, has been very gratifying." □

## northeastern panel stresses marketing

**Bill collecting and threats against the present system of local Hydro administration were other panel subjects.**

"The time has come," the Walrus said, "To talk of many things. . . ."

And although a panel adopting this title at a joint convention of the Northland Municipal Electric Association and the Northeastern Region of the Association of Municipal Electrical Utilities at Coniston didn't discuss shoes, ships and sealing wax, they did mention marketing, customer relations and the threat to abolish Hydro commissions.

W. E. Edwards, of Sudbury, started the ball rolling by stressing the importance of marketing, saying that the subject usually got a cool reception from utilities.

"I think that the majority of us here do not understand and do not have the time to analyse markets properly," he said.

Advertising was important, but it was only a marketing tool whose effectiveness was curtailed by failure to investigate the needs of the customer.

H. A. Prescott, Mayor of Capreol, suggested from the floor that Ontario Hydro should do more promotion on behalf of the utilities.

C. W. Palmateer, Ontario Hydro's advertising manager, replied that the utilities were expected to enter into a marketing program and to advertise to achieve their individual objectives.

H. B. McCubbin, newly-elected president of NMEA, told delegates: "We have to reset our minds to the idea that we do have to get out and sell. We have now become a sales organization."

Another panelist, B. M. Graham, of North Bay, pointed out that the record of Ontario's publicly-owned electrical system in providing low-cost power compared favorably with utilities almost anywhere in the world.

"It really bothers me to see this tendency to nibble away at the system we have," he said. I am all for change, but we do not want to change negatively. I think the proposal to replace local commissions by a committee of council is a retrograde step."

A third member of the panel, P. M. Garlough, consumer service and sales engineer with Ontario Hydro at North Bay, said that one of a Commission's most difficult tasks was

*It was the largest meeting ever — thanks largely to the efforts of these conference executives. Left to right are: W. A. Coltart, Chatham; C. H. Kew, London, general chairman; H. A. Luckins, Sarnia, conference chairman; Helen Laurie, Sarnia; and R. A. Ion, Brantford.*



the collection of accounts. But he urged utilities to consider the circumstances of individual customers.

Cases where previously unimpeachable customers might be disconnected because they did not pay their accounts through illness could only reflect on the utility, he said.

"It will be a sorry day when we set policies which are not subject to judgment," he added.

Mr. Garlough said unscheduled interruptions could be turned into opportunities to involve customers in utility operations by later telling them why and how the break-down occurred. □

## power costing progress

In what he called a "bare bones" interim report, John Murphy of Barrie brought District 2 delegates up to date on progress of the Power Costing Committee.

With representatives from the OMEA, the AMEU and Ontario Hydro, this composite committee was formed at the request of the OMEA to study the consequences of the new power costing procedure introduced at the first of the year and to determine whether the repayment policy governing the cost of frequency conversion, completed in 1959, should be reconsidered.

"In my opinion", Mr. Murphy said, "the formation of this group is one of the most important steps ever taken by the OMEA and will do much to improve relations between Ontario Hydro and the municipal commissions."

Outlining progress, he reported that 21 letters and briefs had been received from utilities and these had been reproduced, assembled by districts, and sent to each member of the committee for their information and study. He said frequency standardization and increases in the cost of power from 1964 to 1966 were the points recurring most frequently.

The utilities concerned will be invited to speak to the committee on their briefs at dates yet to be determined. □

## office group learns to listen

Delegates got a lesson on how to listen at one session of the 34th Accounting and Office Administration Conference of the Association of Municipal Electrical Utilities at Sarnia last month.

Toronto communications consultant C. W. Wright told the Western Division conference that human listening capacity is virtually untrained.

"We are taught to read, write and speak, but no one ever teaches us to listen. Yet it is through listening that we learn most," he said.

"The two greatest barriers between management and staff is that nobody listens and everybody wants to talk when about 45 per cent of your communication day — that is the time spent each day communicating with people — should be listening."

"Personnel follow through" was the su of J. A. Fox, of the Polymer Corporati Sarnia. Mr. Fox told delegates that ma ment is a profession whose job it is to org manpower.

"Managers must be sold on the fact supplying the working needs of employ good for the organization. Each and employee has special skills which, when perly developed, can be of great benefit t organization," he said.

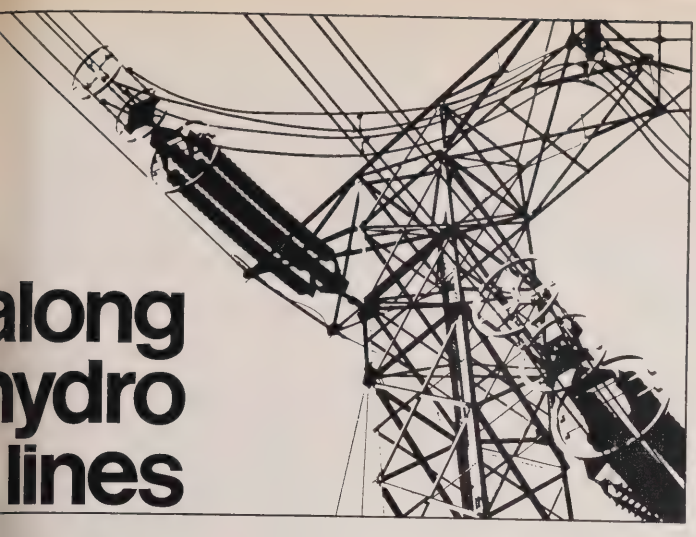
An indication that Hydro rates may l the increase came from Ontario Hydro C man George E. Gathercole.

"Prices, material costs and salaries are and the charges for electric power are goi have to go somewhere," said Mr. Gathe "You, as economists, must continue wo toward keeping costs down and holdin creased rates at a minimum.

"Many businesses have failed," he said cause they did not have financial people ing an eye on their affairs. It is a t to you that in more than 60 years of oper there has never been a breath of scandal Hydro in Ontario."

General Chairman C. H. Kew of don said that with 293 delegates the co tion for accountants and office manager the largest ever held in the division.

The conference decided to appoint a ste committee to investigate the possibility employee training course for office persc Next year's conference will be in North under the joint chairmanship of Wib McL Etobicoke, and Gordon Gloster, York.



# along hydro lines

## anium bids called

rio Hydro has called for bids to supply up to 5,500 tons of uranium to its nuclear-electric power stations, Hydro Chairman George E. Gather- announced recently. He said: "We have asked for tenders from major iers for uranium either in its raw form from the mine or refined as um oxide to a maximum of 1,100 tons for delivery up to 1973, and tons up to 1980.

he bids now being called will cover most of our uranium requirements 1980, at least on the basis of our present plans which contemplate ddition of about 500,000 kilowatts of nuclear capacity a year between and 1980."

first of two units at Hydro's 1,080,000-kilowatt nuclear plant at ring, 20 miles east of Toronto, is scheduled for operation in 1970. fuel loading of the first reactor is 116 tons of uranium oxide.

Gathercole also said that options had been taken on equipment to d the capacity of Pickering to 2,160,000 kilowatts. He said the plant ivably could reach a capacity of more than 3,000,000 kilowatts if the ic Energy Control Board approves. The reactor at Douglas Point, a's first full-scale nuclear power station, is due to start towards the this year. □

## w voltage guide

guide on preferred voltage levels for AC systems is available for cal utilities, their customers, the manufacturers of electrical equip- and designers. Published in a combined English and French edition, ide is a joint effort of the Canadian Electrical Association, the Cana- ectrical Manufacturers Association and the Association of Municipal cal Utilities (of Ontario).

guide covers systems up to 50,000 volts and is the first nation-wide ent on voltage levels and variations. Its publication marks the cul- n of five years' work by the three major electrical associations.

es are available at 25 cents from each association office: CEA at 02, 345 Victoria Avenue, Montreal 6; CEMA, 10 Price Street, Toronto AMEU, 620 University Avenue, Toronto 2. □

## trical improvement loans

esponse to Ontario Hydro's electrical home modernization plan has thusiastic, says D. J. Gordon, Hydro's assistant general manager of ng.

portant feature of the plan is the offer to help homeowners to ze electrical installations with loans from $100 to $2,000 for mprovements, supplementary heating or complete conversions to heat.

redit plan will be modelled on chartered bank consumer loans and ne improvement loans. Ontario Hydro will lend money to its resi- ustomers and those served by municipalities participating in the periods up to 10 years at interest rates that will cover costs. It is hoped that even those utilities with plans of their own will take advantage of the new proposal. Details of this co-ordinated venture will be worked out with the various segments of the electrical industry during the next few months.

Objectives of the plan are increased efficiency, improved safety standards and the creation of greater electrical capacity for modern appliances. □

## More time to plan

Because of the Electric Heating Association and Electric Service League of Ontario merger, this year's conference of the province's electric heating industry has been postponed for a month. Committees of the newly-formed Ontario Electrical League are now planning the meeting for November 27 and 28 at Toronto's Inn-on-the-Park.

OEL manager W. L. Scott says the postponement will give those companies which did not participate before the merger a better chance to plan for the enlarged event. Former members of the EHA and ESL are automatically members of OEL for this year.

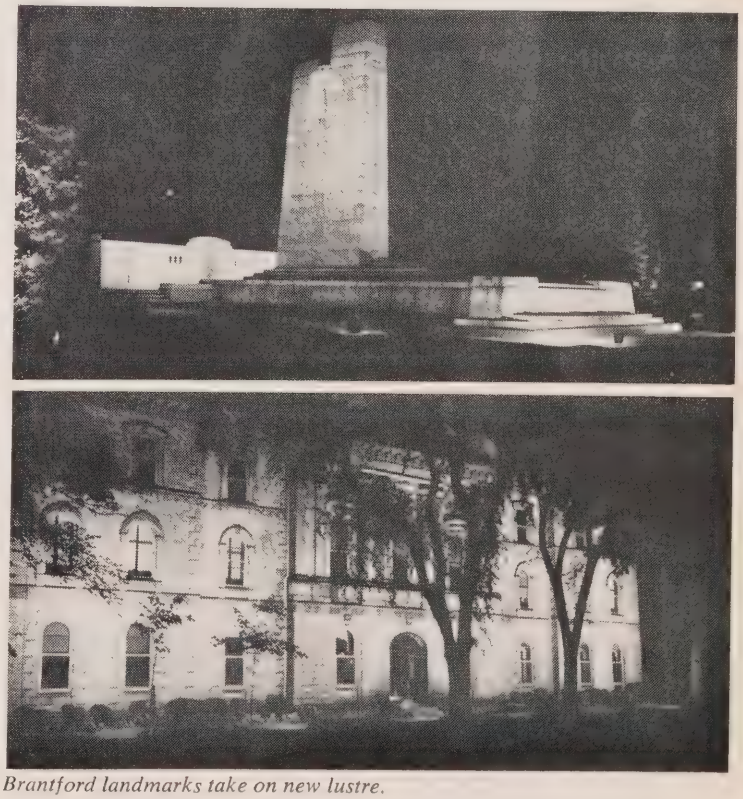
With a theme of "Electrical Home Modernization," the conference is expected to attract more than 1,000 delegates. "The trend today is more and more towards home modernization and, of course, emphasis is placed on conversion to modern heating systems," says Mr. Scott. □

## Training team returns

Last members of a 10-man Ontario Hydro team have returned from desert dust and heat after four years training Iranians to operate and maintain a $65 million hydro-electric station on the Dez River. The plant is only part of a huge project to restore the parched Khuzestan plain to the prosperity which 5,000 years ago made it the "breadbasket" of the Persian world.

Built with World Bank funds, the station is supplying 130,000 kilowatts from two units. Two more units are on order and there is room for a further four. Parts of the station came from all over the world — turbines from Japan, generators from Germany, circuit breakers from the United States, sluice gates from Portugal. Ontario Hydro, with its wealth of hydro-electric experience, contracted to supply the operational know-how. □

## New lamps for old



*Brantford landmarks take on new lustre.*

Lamps got a final polish at Brantford recently as Hydro's Operation Aladdin swung into dusk-to-dawn illumination of gardens, pathways, buildings and memorials. Brantford PUC's general manager N. A. Grandfield says the dis-

play produced a flood of inquiries from the public. More than 120 VIPs were taken on a tour of the exhibit.

Designed to make people aware of the effectiveness of decorative lighting, Operation Aladdin is a pilot scheme which left Brantford for Sudbury and will also visit the Belleville-Trenton areas, Port Arthur and Fort William. Its sponsors include Ontario Hydro, the local utility and the Canadian Electrical Association.

Sudbury Hydro organized a dinner and tour of the floodlit parts of the city for about 100 guests. □

## Final arrangements



*They've working on a workshop.*

Members of the AMEU Metering and Service Entrance Equipment Committee make final arrangements for the fifth Metermen's Workshop, to be held November 17 and 18 in the Skyline Hotel, Etobicoke. Ninety-three utilities were represented at last year's meeting. Left to right in the photograph are Kenneth Cryer, Department of Trade and Commerce; J. E. Moynes, Lindsay Hydro; D. T. Smith, Kingston PUC; Reg Davies, Niagara Falls Hydro; and W. R. Percival, Ontario Hydro. □

## Selling Canada Down Under

Ontario Hydro Commissioner Ian F. McRae was spokesman for an eight-man trade mission which returned last month from Australia and New Zealand. Their job: to assess the prospects for selling Canadian power-generating equipment to those countries. Findings are being published by the Department of Trade and Commerce for distribution to the industry throughout Canada.

Mr. McRae, former chairman of Canadian General Electric, has long experience in the fields of electrical and nuclear engineering. He was appointed a Hydro commissioner earlier this year. □

## A plug for electricity

One of these days you may pull into a roadside service station, ask the attendant to plug in your electrically-powered car for a quick boost, and zip silently off along the highway.

Meanwhile, a wide variety of electrically operated work vehicles are coming into use — as was shown at a recent demonstration held in Etobicoke before several hundred industrial engineers, plant managers and Hydro officials. Emphasis of the demonstration, which featured everything from fork-lift trucks to small personnel carriers, was on lifting vehicles.

About 20 vehicles produced by Canadian, British and American companies were put through their paces at the show, which is also visiting 10 other major centres across the country. Eight power authorities acting through the Canadian Electrical Association are sponsoring the event together with the manufacturers and distributors and Cominco Limited.

One-third of all the lifting machines of this type produced today are battery-operated. Most of them are used throughout the day and plugged into the power supply at night for recharging. Compared with similar gasoline-powered equipment, running costs are said to be more than 90 pe lower.

How soon shall we see battery-powered automobiles? Well, they w the rage at the turn of the century, although their range was limited or 60 miles a day.

General Dynamics, one of the biggest industrial firms in the US Edison Electric Institute, which represents several US electric utilities recently they have been working on a battery propulsion system since And the Ford Motor Company suggests that big news is just ov horizon.

Battery-powered vehicles, they say, would ease the air pollution lem because the system generates no noxious fumes.

## Equal pay is unrealistic

Expressing apprehension about the rising cost of living and the u gallop in salaries and wages, Ontario Hydro Chairman George E. Gath said at the Canadian National Exhibition in Toronto that he was also w about the philosophy that Canadian pay rates could be raised to parit those in the United States.

"So long as Canadians follow conventional standards of work comr this continent, there is no way that our country — impressive as sources are — can carry a large foreign debt, overcome the disadva of smaller industrial size and shorter production runs, and still pay s and wages to its workers comparable to those for corresponding j the United States," he told an Electrical Day luncheon.

"Increases must come from hard work, enterprise, saving and enl productivity. Any other course places us surely on the road to obli a separate nation," he warned.

Mr. Gathercole said he realized that the manufacturers of ele equipment were plagued by labor shortages and other difficulties, asked for their full co-operation in meeting delivery dates. "In view underlying importance of electric power to our whole economy, we stress the necessity of utility orders being given a high priority," he s

## Spotlight on design

Under the Design Canada program, awards were presented last mo manufacturers of 49 major appliances carrying 16 brand names. Spo by the Department of Industry, the National Design Council a Canadian Appliance Manufacturers Association, the program include cation by a panel of independent experts who examined the artic function, shape, materials, color, surface finish and suitability of des efficient production and intended market.

In the electrical field, appliances judged and displayed included ref tors, ranges, washers, dryers, dishwashers, freezers, air conditione dehumidifiers.

Following the awards, a design seminar was held where a pane detailed recommendations derived from the judges' appraisals to sti



*Elevated elements intrigued visitors.*

cussion on how Canadian appliance design might be improved. Comisons were made between Canadian appliances and those produced oad and industry trends were studied.
ward winning appliances were displayed to the public for a month he Design Centre in Toronto, under the theme "70 Years of Progress ppliances." Cooking demonstrations by food firms and other organizas were held daily. One of the many attractions at the Centre was a little he old, a vintage electric range loaned by Ontario Hydro and which igued John Parker, chairman of the National Design Council, and Jean ac of the Federal Department of Fisheries. □

## family affair



*Archdekins of Brampton are community workers.*

about Brampton and you can hardly fail to mention the four Archdekin ers. For a start, they're all members of Brampton and District Chamber mmerce. From the left, brother Elmore is also chairman of Brampton , and has been for most of his eight years with the commission. Leo sident of the local Red Cross, Jim a Brampton councillor and Albert, ber director. Incidentally, there is a fifth brother, Fennil, a doctor in arling. □

## unicipal briefs

**Ronald Harrison**, general manager and secretary of Scarborough PUC, will retire early next year after 44 years with the commission. Mr. Harrison is a graduate of the University of Toronto and started work with Ontario Hydro, later joining brough PUC as a superintendent. He is well-known in electrical circles ario and is a past president of the AMEU.

**Hydro** is spending $74,500 to turn its small Alice Street service ng into new office and workshop accommodation. The one-storey, laced premises will be heated electrically.

**ngton PUC** uses three per cent of revenue as the basis for budgeting ctive load promotion program. Out of this comes the cost of advertisth the local radio station, shared with neighboring utilities, a winter wiring plan, the cost of newspaper advertising, advertising messages tomers' bills and a variety of promotional literature.

**Ontario Hydro** rural areas amalgamated last month to encompass most abton county. The resulting Lambton Area replaces the Sarnia, Forest Springs areas and operates from a new building at Wyoming.

**a** has approached Ontario Hydro for information about receiving under a cost contract. More than 850 customers are at present d by the town's local system which is owned and operated by Ontario

**commendation** for East York Hydro manager James Wickiam, retiring 1 years with the utility, comes from the East York Times. "We join s many friends in wishing Mr. James Wickiam many years of happy ent. What Jimmie doesn't know about East York Hydro isn't worth g. He has been a long and faithful public servant," says the paper.

**e** will get an elected Hydro commission when the township joins ng Branch, Mimico and New Toronto next year. This is the decision Ontario Municipal Board after hearing an application for amalgamation. Etobicoke had favored an appointed commission while Mimico had asked for elections.

**Waterloo PUC** has appointed J. D. Black, of London, Ontario, to succeed W. G. Woods, who plans to retire as treasurer next May because of poor health. Mr. Black, who joins the commission as assistant treasurer, has worked for London PUC for 18 years.

**Campbellford PUC** held a retirement party for manager Jim McMullen, who started with the PUC as a lineman in 1920. His later jobs included those of operator at the town powerhouse, meter reader, foreman and assistant manager. Mr. McMullen received gifts of luggage, money and an electric carving knife.

**How's this** for an endurance record? Thirty-nine years ago, Mrs. Marcus Curle, of R R 4, Campbellford, bought an electric light bulb for her upstairs hall. The bulb is still going strong.

**Orillia's population** will be raised to 20,000 next year with the annexation of 3,000 acres of Orillia Township. The question of city status is set for future study.

**Former OMEA president P. R. Locke** has been appointed by St. Thomas PUC to write a history of Hydro in St. Thomas. The article will be part of St. Thomas' contribution to the OMEA-Ontario Hydro Hall of Memory Centennial project. Mr. Locke is a veteran commissioner with the PUC.

**Kenora** has become a cost-contract customer of Ontario Hydro. Delivery of up to 15,000 kilowatts of electric power is expected soon. New facilities include a substation and a mile of 115,000-volt transmission line.

**Only 15 months old,** Widdifield Township Hydro is investing more than $175,000 in new facilities and equipment this year. Reeve Don King, chairman, says land clearing has already begun for construction of a $50,000 electrical substation. The utility is also buying a radial arm derrick truck, a radio communications system and electric water heaters for rental purposes together with a building on Maplewood Avenue for a service centre. Mr. King says they will finance the improvements from available funds and estimated income from the sale of electricity.

**Harold Brownhill** has been appointed general manager of Niagara Falls Hydro. He had been assistant manager and chief engineer since 1963 when he joined the utility. Previously, he was manager of Stamford PUC from 1951 until its amalgamation with Niagara Falls Hydro, in 1963, Mr. Brownhill replaces J. A. (Red) Williamson who has reached retirement age. Well known throughout Hydro circles in Ontario, Mr. Williamson joined Niagara Falls Hydro in 1945 and he was named general manager in 1956. He will continue with the utility as industrial service representative, assisting industrial customers and acquainting them with new electrical developments. A past president of the AMEU, Mr. Williamson will continue his committee activities within the association. □

## Vintage steam

Enthusiasts flocking to this year's Steam Fair at Milton were intrigued by an 1897 vintage engine from Ontario Hydro's historical collection. Looking more like an ancient cannon, the old engine coughed and wheezed away



*She coughed and wheezed but lit the lamps.*

to drive an antiquated generator which, in turn, illuminated two spluttering and equally vintage arc lamps. The equipment was once used to light a lumber mill at Coboconk, near Lindsay.

Also at the annual show of the Ontario Steam and Antique Preservers' Association were an old steam shovel and two steam rollers, the pride of Ross Johnson, operating chief at Hydro's Lakeview power station. Mr. Johnson, his son, Douglas, and several other Lakeview enthusiasts spend much of their spare time rebuilding old steam equipment. □

## City hall lighting wins



*He threw light on council deliberations.*

Problem: how to floodlight the four-and-a-half acres of blank wall belonging to Toronto's new city hall. Answer: with a design that won Toronto Hydro engineer D. J. McKenzie third place and a gold cup in the National Illuminating Engineering Society's Technical Conference in Minneapolis, Minnesota. And his design took precedence over the lighting for the Astrodome at Houston, Texas, which came fourth. First prize went to an Illinois lighting firm which used programming devices to make an ordinary building in the mid-west outstanding, and second place was awarded to a New Orlean's firm for their lighting of the Engineering Building at the NASA space agency headquarters.

Mr. McKenzie's main problem was to cast an even light over the outside corrugated walls of city hall's twin towers, one 300 feet high, the other 234 feet. The curved surfaces tended to throw shadows in all directions. Toronto Hydro joined forces with the City Works Commission to meet the challenge. □

## New $200 million power plant

Ontario Hydro will increase its complement of coal-burning power stations with the construction on the shores of Lake Erie of a $200 million thermal-electric giant. First power is planned for 1972 and Hydro engineers are busy checking the foundations of a site near Port Dover.

The new station's initial capacity of 1,000,000 kilowatts will eventually be doubled to equal, approximately, the amount of power Canada gets from Niagara Falls. Hydro has five other coal-burning stations completed or under construction. □

## Underground trend growing

A recent independent survey suggests that the Canadian trend to underground electrical and telephone distribution systems in residential areas is growing rapidly. Ontario leads the country in the number of communities where underground systems are mandatory in new subdivisions. The survey indicates that only 10 per cent of residential centres in Ontario have not done any underground work while 60 to 70 per cent have a slight to moderate trend toward underground installations, and between 20 and 30 per cent are heavily involved.

The Prairies and British Columbia have many installations. However, the East Coast has very little development and Quebec, with the exception of the major cities, is just starting to consider underground distribution. □

## Galloping breakthrough

Ontario Hydro research engineers have scored a major breakthrough study of gallop — the violent oscillation of ice-covered transmissio in the wind. Galloping can place an intolerable strain upon tower causing them to sag or collapse with subsequent interruption of se

Up to now, the main difficulty has been to build a test line repro this phenomena sufficiently well for intensive study. The breakthroug in the form of a lightweight D-shaped airfoil, attached to the line to si ice. With it, research teams have succeeded in making a test Scarborough gallop for all it is worth.

## Nothing to sneeze at

Laboratory tests conducted by Dr. O. D. Chapman, Professor of B ology at New York State University of Medicine, Syracuse, show t the height of the rag-weed season, air-conditioning reduces pollen air by 98 per cent compared to the outside.

Even with doors being opened 30 times each day the pollen co the air-conditioned room were so low the room could be considere ally pollen-free. In contrast, an adjacent room without air-condi showed pollen counts well in excess of the level considered capa producing an allergic reaction.

## Model simulates utility grid

Quebec's Laval University has installed a small-scale power netw study and teach the operation of electrical systems. The laboratory has four tiny generating units and electronic gear to simulate a power grid, distribution system and load demand.

Students will be asked to solve problems on electrical system oper Answers can be checked out immediately on the model. The model w permit extensive research work, especially in the field of programmir puters for automatic power systems. Laval's electrical engineering ment believes that important special studies can also be carried industry in the field of power system stability.

## Giant nuclear unit

Four US power utilities have made a commitment with Westin Electric to build a 900,000-kilowatt nuclear-electric unit. The entir will cost an estimated $100 million, although the price of the Westin unit, scheduled for operation in 1972, has not been revealed.

## Electrical UFOs

Power lines may be responsible for many recent flying saucer sig according to Philip J. Klass, senior avionics editor of Aviation We Space Technology magazine. Mr. Klass said that most sightings of ur fied flying objects reported near Exeter, New Hampshire, a year ag along or very close to transmission lines.

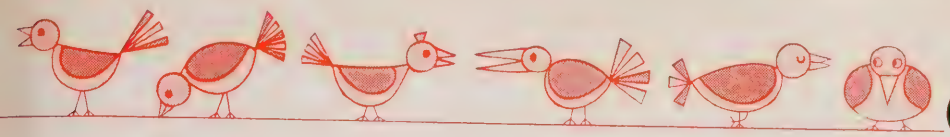
Studies show, he said, that a form of ball lightning is generated electric corona that occurs on high-tension lines under certain con Ball lightning usually appears as a round, moving bulb of light strikingly similar to the Exeter sightings in color, shape, size, spu sound, hovering nature and sudden extremely high speeds.

## August energy production

Primary energy provided by Ontario Hydro in August totalled 3. billion kilowatt-hours, an increase of 6 per cent over the sa month a year ago.

For the first 8 months of 1966, the total is 31.27 billion kilowa hours, up 10.7 per cent over the same period last year. Adjusted seasonal influences, primary energy demand in August was 4. billion kilowatt-hours, 2.7 per cent more than the previous mont

The seasonally adjusted total for August represents 48.45 billi kilowatt-hours at annual rates. This is 348.30 per cent of t energy demand in 1949.



# off the wires

Slowly but surely man is beginning to under- and his environment and the archaeologist is aying his part. Such findings as the Dead Sea rolls and the ancient city of Troy are helping to ed new light on age-old mysteries. A more recent scovery, still unconfirmed, is expected to explain ere all the water came from immediately prior Noah's remarkable voyage in the Ark. And Hydro y be implicated.

A device has apparently been uncovered in a d-eastern country which utilized silver-iodide stals for some unknown purpose but it is said to ar a crude resemblance to a modern rain-making chine. Cautious archaeologists aren't talking but nor has it that a strange orange and vermilion nbol on the side of the artifact is, in fact, com- sed of the letters O and H, joined in such a hion as to resemble an electric plug.

While the evidence does seem incriminating lro can make out a pretty strong case against involvement in the Noah affair. After all, Sir m Beck was only a stripling when the Ark put to sea.

nd nature seems to be making out an equally d case in Hydro's favor relative to last year's barb about the over-abundance of rain falling in plain of Northeastern Ontario. This year, with a one of those diabolical Hydro devices in ration, the rains continued to fall.

armers, according to the Sudbury Star, are com- ning of rainfall that is in excess of last years tourist operators are glum. "Ontario Hydro is ne clear", writes the Star, "even as it was last , in spite of the headlines."

od. Now, if the archaeologists can absolve us complicity in the really big flood, another cloud will have been lifted and people can go to blaming that long-suffering but impervious gent — the weatherman.

nce the symbols of fall, flaming leaves and y pumpkins have long since been replaced by orgiastic orange of the Antelope Eight and the glint in the salesman's eye as the autos make e appearance in showrooms across the land. In h words, autos and autumn go hand in hand so a the present seems a good time to divest our- ls of a few observations which would be even o inappropriate a month or two from now.

st, it's good to see those great glittering as we drive sharing a bit of the responsibility r e mayhem they help us commit on the nation's oughfares. Until very recently it was blasphemy ggest that anything mechanical contributed in way to the tiniest accident. The blame was ad solely and squarely and irrevocably on the ng shoulders of the culprit (or nut as he was frequently described) behind the wheel.

Nv, it seems, safety researchers are finding at least some accidents are caused by faults th vehicles themselves.

Sall comfort, perhaps, in a province which last managed to chalk up a disgusting total of 8 52 traffic accidents. And no amount of buck- ssg will alter the fact that the driver remains fa t in the vast majority of these crashes. Still, it's been shown that mechanical shortcomings do contribute and that the nut behind the wheel can at least be given a safer cage in which to rattle around.

Speaking of cages, one eminent American scientist believes that the "Faraday cage" formed by the modern steel-topped auto shields us from the natural atmospheric electric field and thus contributes to lack of alertness and driver fatigue. He has developed a device about the size of an orange that operates off the battery and provides a substitute field.

The scientist, who has a raft of data to support his theory, thinks that if efficiency is raised in this way, automobile accidents due to human error can be greatly reduced. Installed in tractor trailers, the device is said to have enabled drivers to cut an eleven hour trip to eight-and-a-half hours with fewer symptoms of fatigue.

But this man of science also points out that aircraft, plants, apartments and other buildings are all big metal Faraday cages cutting off the all-import electric field and inducing fatigue. Judging by the appearance of some offices towards five o'clock, he is probably right.

Come to think of it, we house-dwellers do seem brighter and more alert than our apartment-dwelling cohorts. In any event, we have long suspected that electricity does make the world go 'round. We doubt very much if the absence of natural gas would have any dilatorious effect on our ability to function efficiently.

■ All-electric motoring will be with us in more ways than one. It seems evident now that the electric auto will be making a comeback, with some of the world's leading corporations investing time and money in such projects. Ford plans to introduce an electric-powered car in Britain next year and it's a safe bet the other auto giants have been keeping in step with developments.

In the United States a consortium of electrical utilities has been working for several years to bring back the all-electric horseless carriage and thousands of electric delivery trucks are already at work throughout North America and abroad.

As it shapes up, the cars, at least at first, will be particularly suitable for in-town driving or for short excursions. Even so, the prospect of a city free from the roar of traffic and without those nauseous combustion fumes is a joy to contemplate.

As battery research advances, it seems likely that electric cars, with a single charge, will equal the range of a tank of gas. It would then be a simple enough matter to exchange batteries at a service station and get back on the road.

It's the battery charging bit, of course, that intrigues the electrical utilities. They look with some favor on the prospects of thousands of autos being plugged into home charging outlets at night when much of the utilities' generating equipment is idle.

Socially, of course, there will be adjustments to make. Dad will be able to glide silently home at all hours of the night without arousing the household. And there's no reason why junior can't run out of electricity on a moonlit night with his best girl, But don't expect your neighbors in the gasoline, spark plug or anti-freeze business to wax enthusiastic over your new battery job.

■ What with witches, hobgoblins and regional government commissioners about to take to the air on their annual, October 31 fly-past, this seems like a good time to talk of electrically haunted houses. One we have in mind is on the outskirts of Oakville where the inhabitants have grown used to all sorts of electronic wizardry. Music comes from the eavestrough downspout, bulbs glow after switches have been turned off and voices speak from wire fences. Fluorescent tubes held in the bare hand glow brightly enough for reading.

Like most ghostly occurrences, of course, these electrical manifestations were finally traced to worldly sources. An elert electrical contractor, with an ear to the downspout, picked up the call letters of a local radio station. Engineers put everyone at ease with a logical explanation having to do with high frequency radio fields and leaking cables.

A similar phenomenon is reported from England where a householder hears voices from a new radio transmitter emanating from the telephone, stove and of all places, the toilet.

Distracting we would think, particularly for unsuspecting guests. Fancy getting comfortably enthroned only to hear the local disc jockey predicting high winds and shower activity from the depth of the bowl.

■ Kudos of the month go to Ontario Hydro lineman Roger Heath who is really getting to the top fast — in 30 seconds to be exact. Roger recently challenged the world champion pole climber to a match at the Welland County Fair and while he came out second best on both tries he did reach the top of the 90-foot Douglas Fir in exactly half a minute. The champ made it nine seconds faster and allowed as how competition in these parts was hard to find. Any challengers? They both wore safety belts and climbing irons.

■ It's a broad jump from hairy-chested Roger Heath to ladies' skirts but since the restrictions of logic, continuity and propriety have never applied to these columns, we think we can make it.

The subject was raised by a newspaper item which came to our attention during an attempt to catch up on back reading. Dated Montreal, September 4, 1906, it decried the dangerous skirts currently in fashion. To wit:

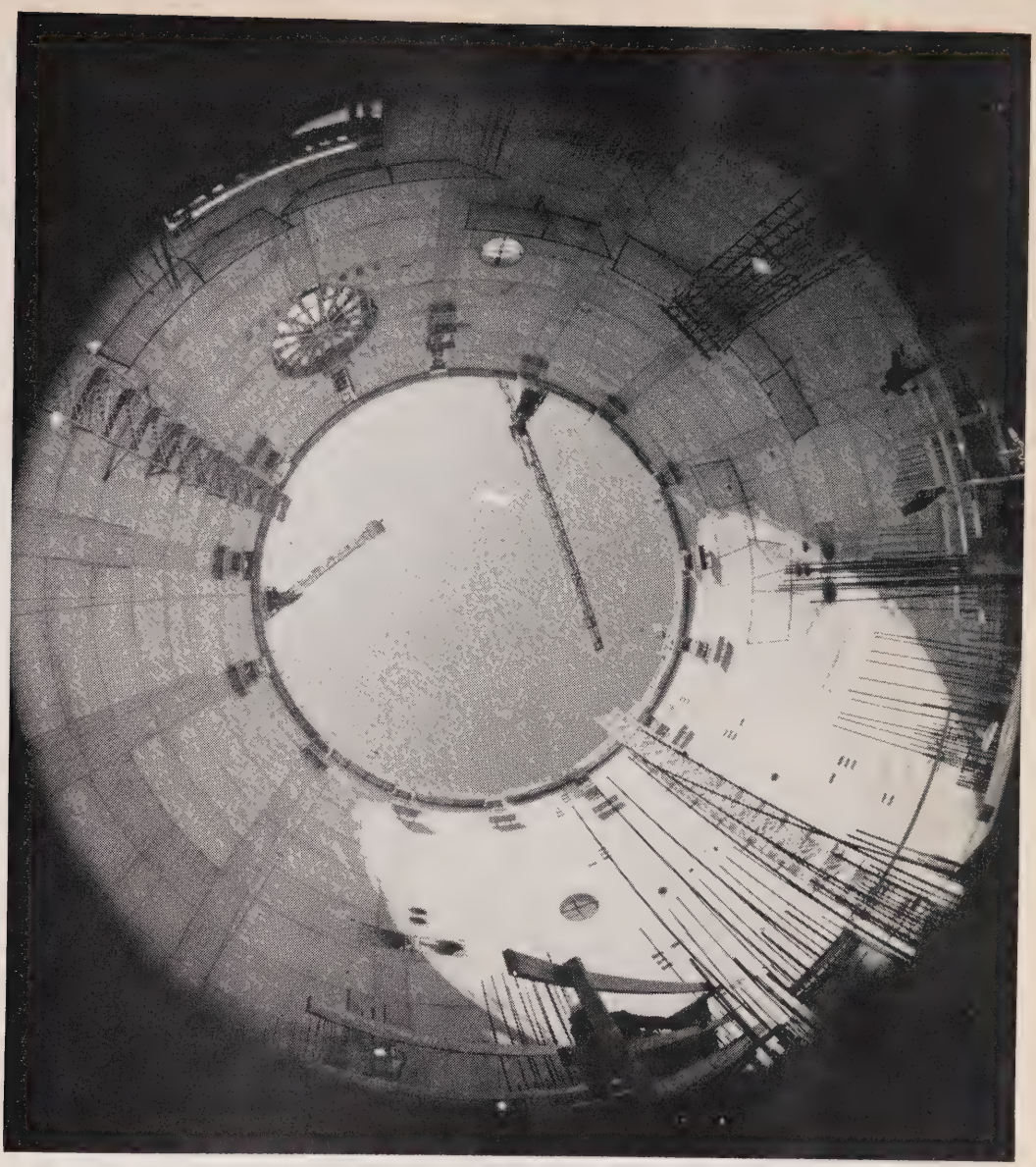
"Local police today decried the current women's dress fashions, referring to the long skirts as 'scavenger skirts'. The claim is that these lengthy garments not only pick up dust and germs but they also encompass a risk of their wearers tripping over them and becoming victims of traffic calamities."

So what else is new? Today's skirts may not pick up any germs but they're still causing traffic calamities — not so much to wearers as to the onlookers. And doctors are reporting a higher and higher incidence of strained eyeballs in the male. □

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# ontario hydro news

## november/1966

- the cranes of pickering
- keon and kilowatts
- sweet smell of prosperity

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**THE COVER**

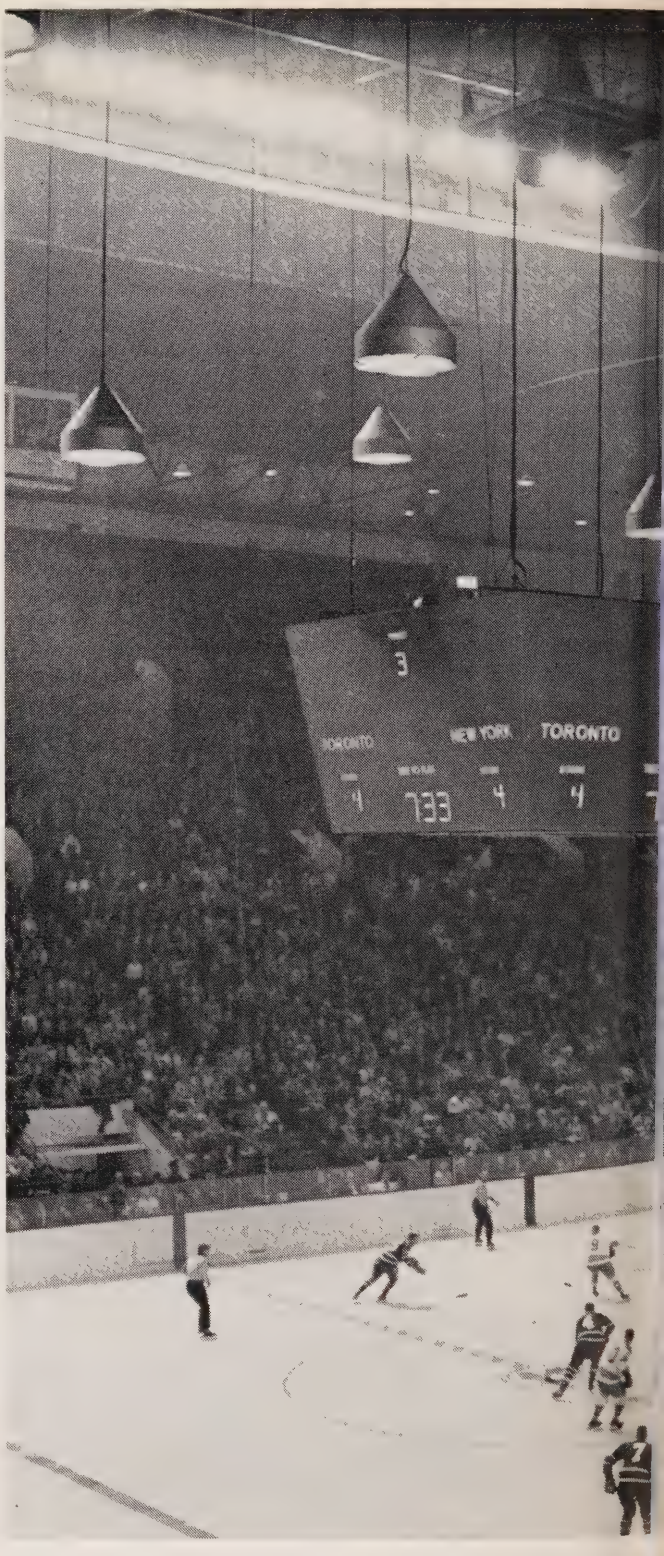
We are indebted to Harry Wilson, senior staff photographer, for this unusual, 360 degree view of the cranes at Pickering—seen looking up through the concrete reactor building of unit number one. The building will, of course, be enclosed with a dome. More details of the giant cranes employed by Hydro on this job and elsewhere are on page 12.

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It's hockey night in Canada and there's a capacity crowd in Toronto's l
Leaf Gardens. Millions more are glued to their television screens and te
fills the air. But to the men behind the scenes it could just as well be
night, or the Beatles, or wrestling or opera. All that really concerns th
that the show must go on. And that's where electricity comes in.

Whether it's for highly complex and powerful lighting, comput
timing devices or merely driving the escalators which transport thou
of people to and from their seats in double quick time, electricity is
to the efficient operation of this vast and internationally-known indoor
ground. For more about the Gardens and what makes them "tick", t
turn to page 14.

# comfortable converts

by LOIS LANE

*This 1910 schoolhouse becomes a comfortable home on the following page.*



## more and more owners of those charming old homes are switching to modern electric heat

They met amid the familiar chalk-and-chatter atmosphere of the country school. She was the attractive new teacher. He, a working youth, had wandered into classes during those free-and-easy days of education.

That was half a century ago. But Mr. and Mrs. Heamon Bennett, as they later became, are back today in the old schoolhouse . . . they bought it as a home when a new public school was built.

Of course, they've altered things here and there. Like lifting the roof, trimming the walls to a height of eight feet and putting the roof back on. They've also erected a few partitions, put in insulation and installed electric heating.

But the memories of Hamlet school, in North Orillia Township near Sparrow Lake, are still there. Like the front door, which is where the girls went in. Or the vestibule that was part of the girls' cloakroom.

Bennetts' Hamlet, as it is now called, was ideal for conversion to electric heat. With its brick veneer construction, the school was a showpiece when built in 1910.

All rooms are fitted with electric baseboard units, with the exception of the kitchen where ceiling cable was installed to make room for cupboards and appliances.

"We think the heating system's fine," said Mrs. Bennett, standing where she once stood in front of her class. "It is clean and quiet. There's nothing to wear out and there are no drafts like in the old place."

After a full year in their new home, the Bennetts have found that the total cost for all electrical services is about $330. And their experience only reflects what an increasing number of people are discovering for themselves — that electric heating can successfully be installed in the older home.

R. B. Jackson, home heating sales officer for Ontario Hydro, says: "We believe that the electric heating conversion market will rise from 2,300 to 15,000 installations between 1966 and 1970. In 14 years' time, there should be approximately 135,000 older homes with this type of heating."

Rustic brick, cosy Cape Cod or rambling frame? Town, city or country? Whatever the style or location, the charms and challenges of older homes are certainly appealing to more and more buyers.

In many city areas, there is no choice. The older home is the only one available. Toronto

*Modernized and converted to electric heating, the 56-year-old former school north of Orillia now looks like this. Hazel Bennett, who once taught in the old school, is shown in her all-electric kitchen and with her husband and grandson in living room.*







*Mrs. Jones chose electric ceiling cable heating for her 10-room home. Some of her handsome, well-chosen period furniture is shown in living and dining room. Her kitchen is all-electric and features centre floor, built-in cooking area.*

l Estate Board reports that sales of older
ıes in the metropolitan area were up 25
cent a few months ago and that a major
or was the tight money situation slicing
new home construction.

Vhether buying their 25-year-old "dream
ıe" because they fell in love with it or be-
se there was no choice, both groups of
ıeowners must eventually replace their
ing heating system. (Experts estimate the
age lifespan of a fuel heating system at
een 10 and 15 years.)

nd many are switching to electricity be-
e of its economy and convenience of
ation.

Vhen heating a home with fossil fuel, there
tremendous loss by the fuel not being
erly burned and by losing a great amount
at up the chimney," says Peter Parker, an
rio Hydro expert in electric heating con-
on.

ge is no barrier. Boston Edison has super-
the successful installation of standard
oard heaters in a frame home dating back
40.

other old residence with the latest in heat-
the charming regency-style home of Mr.
Mrs. Edward Jones, of Niagara-on-the-
Ontario. This 10-room, two-storey house
uilt in two stages. The main part of the
was built in 1835 while, 25 years later,
hen and small back kitchen, now a
ry room, were added.

main floor consists of a living room and
room, a small morning room (where
dy of the house kept her accounts and
he servants their orders), a large main
ıd the kitchens. Upstairs there are three
edrooms and a bathroom. The basement
ns a study and library.

Joneses chose ceiling cable to heat most
3,500 square feet of their home.
year they ran up a bill of $525 for all
al uses including heating.
find this quite comparable and reason-
our home in Toronto, with only 2,000
feet, cost $300 a year to heat with oil,"
r. Jones, a consulting engineer.

ing from the tranquil country to the
g city scene, we find East York Reeve
avidson comfortably installed in her
rey home, which was converted to elec-
ting four years ago.

Davidson, a commissioner with East
ydro, is a staunch supporter of electric
"Even before I moved in here I was







*Gracious living is exemplified in this 131-year-old home of Mr. and Mrs. Edward Jones of Niagara-on-the-Lake. It has been carefully restored and converted to electric heating.*





*Reeve True Davidson of East York, in Metro Toronto, lives here. She switched to electric heating four years ago and vouches for its comfort and economy.*

d on this form of heating, although I relied it in a somewhat unorthodox manner," she s.

Her first home in East York was a tiny tage, which she fondly calls her "three com-tment orange crate." Minus a basement and clapboard construction, the cottage made ss Davidson turn to electric heat out of peration.

The house had an old coal stove and I n't trust it," she says. "So I heated the hen with the electric stove, the living room h an electric fireplace and the bathroom n an uninsulated hot water heater, which I plemented with a portable electric heater en it was really cold. I think this proves that can be warm and comfortable in an plute shell with this form of heating."

When she decided to change the heating in present home, Miss Davidson chose electric board heaters for the seven rooms. "Oper-g costs run about $30 a month in the ter and are far less in the spring and fall," says.

or those interested in what can be accom-hed in the electric heating conversion field, w Ontario Hydro film will be premiered at electric heating industry conference spon-d by the Ontario Electrical League at nto's Inn-on-the-Park this month.

he film, "Home Modernization Through tricity", depicts 10 older homes around the ince which have been converted to electric ing by various means, including electric aces, heat pumps and hydronic systems. interesting project is the wholesale assault he community of Deep River where 21 frame homes have been converted. Plans is Northeastern Ontario community also de the future conversion of 55 more s to electric heating.

any homeowners have found lack of ready an obstacle to installing electric heating proving their wiring. This difficulty will pear when Hydro's Electrical Home rnization Plan comes into effect next Loans of $100 to $2,000 will be made to ntial customers for improved wiring sys-supplementary heating installations and rsions to electric heating. Ontario Hydro he municipal utilities are now discussing an.

ether a customer lives in the country, a town or a metropolis, and whether the is being either modernized or restored, ic heating will pay off. □







*Precision carpentry produces curvaceous draft tube formwork for Barrett Chute project. Two electric revolver cranes mounted on a construction bridge carried out major lifting at Mountain Chute, including concrete placement and power house erection. Close-up shows concrete being quarried from Stewartville dam. Crossection of Mountain Chute powerhouse construction is shown, far right.*

# chain of power

## Hydro believes in putting the same water to work again and again

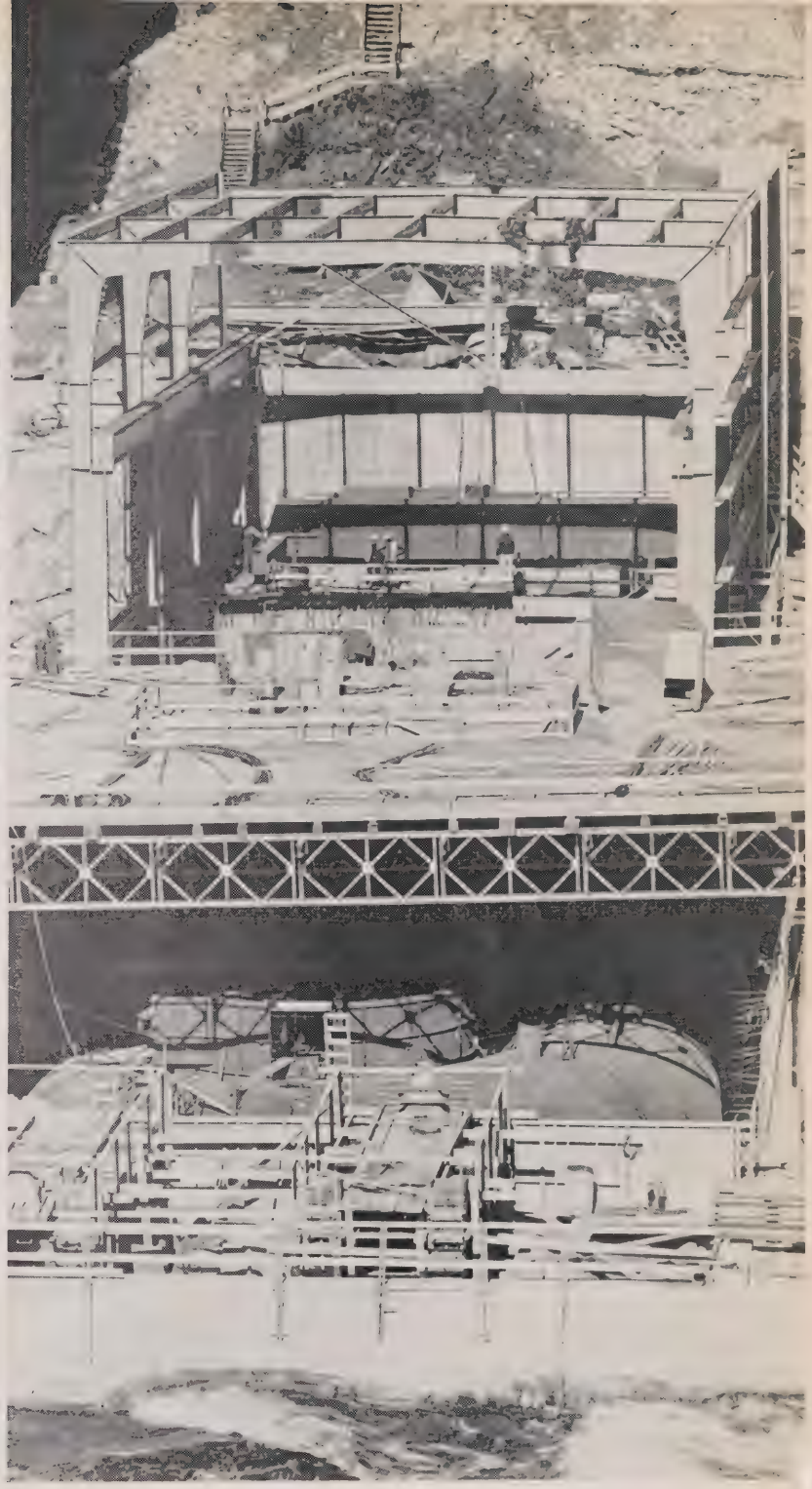
It's quiet enough where the Madawaska i
begins its rippling 130-mile journey. I
the cry of an occasional loon disturl
silence in Algonquin Park while the une
ed swirl of a canoe paddle sounds like a
hammer under thin tin.

But the clear, placid waters gain mom
with the miles until they finally roar th
a man-made chasm at Mountain Chu
miles from Renfrew and the first link
chain of hydro-electric stations placed
gically along the river.

Ontario Hydro believes in using the
water over and over again. Once th
million Mountain Chute station is com







t next year, water ejected from its multi-ton
nes will tumble a further eight miles to
ett Chute to produce power there.
ne process will be repeated at the Cala-
and Stewartville stations, even nearer
Madawaska's confluence with the broad
tawa River at Arnprior.
l told, the Madawaska complex will gener-
sturdy 457,000 kilowatts, enough to keep
cities of Ottawa, Kingston and Peter-
ugh happy. All four will be operated by
te control from Chenaux power station,
iles away. But first, the older links in the
must be enlarged.
h Barrett Chute and Stewartville, origin-
ally built in the forties, are being expanded while the Calabogie plant, a veteran of 1917, is getting new sluice gates to cope with the increased flow.

The harnessing of any mighty river puts slide rules and engineering know-how to the test. What, then, are the problems involved in taming the Madawaska?

One of the most serious difficulties at Mountain Chute was a major fault in the bedrock beneath the dam. According to engineers, this crack had prevented the site from being developed years ago.

Modern engineering methods, however, enabled the crack to be sealed by grouting, a process in which the fissure is filled with cement and sand.

Looking ahead, a concrete flap will be used instead of the conventional steel gate to close the final diversion port in the dam at Mountain Chute.

The flap, already in place, is hinged at the base of the dam on the upstream side. Once construction has reached the point where the opening can be plugged, the flap will be lifted off the river bottom by hoist. Water flow will then close the flap and the headpond will begin to fill.

Blasting will cause a headache in more ways than one at Barrett Chute, where tons of rock



*Rock excavation for the two additional units at Barrett Chute is a ticklish proposition due to proximity of existing powerhouse. Great care must be taken with blasting.*

must be removed to make way for the addition of two generating units. The job calls for detailed planning and great delicacy to avoid damaging the existing units.

Explosives are out at Stewartville for fear of harming the dam. Instead, engineers have decided to quarry out two sections of concrete 50 feet high and 30 feet wide to incorporate two new intakes. A steel coffer dam is being bolted to the up-stream side of the dam to hold back water during quarrying.

The key to the Barrett Chute and Stewartville jobs is the scheduling of work so that the existing plants can be shut down, partially or fully, for nine months beginning next March. Intakes must be built, a canal de and concrete work completed in time t peak power demands the following Dec

Mountain Chute's 8,500-acre headpo been designed so that water can be hel to generate power at all four stations a of greatest demand.

Hydro now has approximately 750 en and construction workers on the Mad projects. It is spending an estimate million on the river.

But there may be other links for the Two other locations have been invest although there are no immediate pla development.

# the sweet smell of prosperity

by NICK NICKELS



## a quarter of Canada's apple crop is grown in Ontario

There's the sweet smell of prosperity this season of the year in Ontario . . . the smell of apples.

The odor comes but faintly these November days from the thousands of orchards where the picking is all but completed. It grows stronger in cold storage rooms where the crated fruit is stacked to the roof. It becomes headier still on the busy lines of the packing plants where two shifts are working.

And the redolence is downright ravishing at the processing plants where juice, cider, apple sauce and pie filler are in the making. Only at the sealed-off controlled atmosphere storage rooms does the presence of the apple go unnoticed — until the rooms are opened late in the winter.

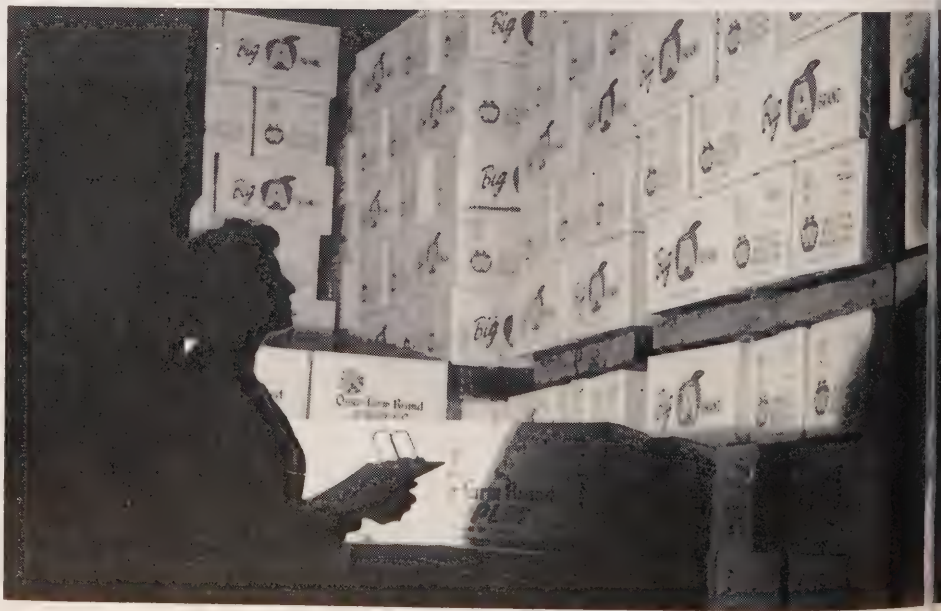
If it takes the fragrance of apples to remind most of us that it is autumn, the sweet smell also serves to illustrate how unimaginative and uninformed we are about the apple industry. It is a year-round business.

There's only about two weeks' respite between the packing in July of last season's crop from the storage rooms and the new harvest early in August.

Canada's apple crop this year is about 20

*Pickers gently dump apples into plywood bins used to transport fruit from the orchards. Bottom photo shows crated apples in cold storage for use next year.*





million bushels. One-quarter of this harvest comes from Ontario.

Eight hundred thousand bushels of Eastern Ontario's crop is grown in Northumberland County on the 2,500 acres of orchards that spread along the sandy loam stretching from Port Hope to Trenton.

Here you will find the complete apple industry neatly packaged, from growing, grading and export to processing; from the benevolent assistance of the Ontario Department of Agriculture at Brighton to advanced orchard research and supplies of root stocks at the Dominion Experimental Farm at Smithfield.

Electric power is used widely in Northumberland County in the storage, packing and processing of apples. Brighton PUC manager C. J. Acker says his utility serves power to one co-op, three private storage plants and one processing plant and pipes water to 10 orchards for spraying.

If you are fast enough on your feet, you may corner briefly one of the "Big Apples" of Northumberland County, 40-year-old Jim Knight, of Wicklow, between Colborne and Grafton. He started packing applies on his father's few acres in 1947 with a half-ton pick-up truck, recalling that he "put up" 10,000 bushels in the barn.

From Mr. Knight's 200-odd acres of orchards today, plus the harvest he buys from other orchards near and far, he will grade and pack for domestic consumption and export about 300,000 bushels of apples.

In addition to the orchards, Mr. Knight's "plant" consists of several cold storage rooms, three controlled atmosphere rooms — where the carbon dioxide breathed out by stored fruit is drawn away, making the fruit inert to deterioration — a packing house, four tractor-trailer units, half a dozen each of fork-lift trucks and small service tractors, two spraying outfits and 1,400 plywood picking bins. He values his spread at $400,000.

The key to Mr. Knight's success is the constant striving for the highest possible quality of fruit, both his own harvest — about 50 per cent McIntosh, some Snows and the balance in Cortland and Rhode Island Greening — and the apples he buys for packing and export.

A "must" minimum target for all growers, Mr. Knight says, is 600 bushels to the acre of top-grade fruit which must not exceed a 10 per cent cull at the packing plant.

The progressive apple grower must plant





*With automated precision, this year's crop slides by on the packing line. Below, PUC men turn off the irrigation system in orchard near Brighton.*

for the future. Mr. Knight has about 200 acres in young plantings, semi-dwarf root stocks which, when pruned down at maturity, will enable more than 60 per cent of the crop to be picked from the ground. Already the oldest section of the young orchard, planted in 1960, is starting to bear fruit.

And finally to the Knight apple story must be added total family participation. Wife Jean is a bookkeeper, son Roger drives a transport, son Ronnie drives a fork-lift after school and daughter Wendy works in the retail sales room on weekends and holidays.

The first Northumberland County orchard on record was set out east of Cobourg in 1804 by two New England brothers, Levi and Stoddard Bates. It was hardly a commercial orchard, nor were there any such for the next 60 years. Even then, most orchards were badly planted, unpruned and generally neglected two-acre plots.

In 1890, improved orchard practices put apples on a paying basis and by 1910 the industry was firmly established because of high prices and a succession of good crops.

Northumberland County orchards have 190 days of growth, the shortest apple-growing season in Canada. It is also one of the driest regions, with 32.9 inches of rainfall. With a total of 2,500 acres, county orchards average 25 acres in size, although four or five orchards contain 150 acres and more.

The Canadian apple story stems from the first orchards set out by French farmers near Port Royal in the Annapolis Valley, N.S., and in small plots beside L'Habitation in Old Quebec.

What of the future? Well, a new variety of apple called the Quinte has been developed at the Smithfield experimental farm.

Known to horticulturists for 20 years as T-441, the Quinte has been controlled by budding and grafting for winter hardiness, compatibility to average orchard soils, a maximum yield, early harvesting, good looks, hardy handling and a nutrient content to suit modern processing techniques.

The Quinte has been on the market since 1964, but apple men do not expect the housewife to fully appreciate its fine characteristics for 30 years. By that time, the Quinte may surpass the popular McIntosh in consumer demand. It could gain popularity much sooner, however, in a "puffed apple" cereal product now being tested at Smithfield. □

# the cranes of pickering

## nuclear-age giants swing with the breeze

Few people in the Toronto area realize that three of the world's largest weathervanes are rotating through every point of the compass right on their doorsteps.

Never intended as a meteorologist's delight, the giant cranes at the site of Pickering nuclear power station are nevertheless allowed to swing with the breeze when not in use. This reduces wind loads on their huge 230-foot booms.

Special brakes stop the pendulum action during working hours, but wind speeds above 40 miles an hour will force a shut-down.

Pickering's three tower cranes are considered to be among the world's tallest. Their size promotes faster handling of construction materials and right now they are operated continuously from 8 a.m. to midnight.

With a further crane on order from Scotland, the spidery giants will pour 150,000 cubic yards of concrete and erect 12,000 tons of structural steel before Pickering's nuclear-powered units start up. Two major construction items will be the 155-foot tall reactor buildings, which will have walls four feet thick.

At present, the cranes are operating at the 100-foot mark, all the height necessary at this stage. Before the project ends, however, the towers will rival Ontario Hydro's 18-storey Head Office in height. Twenty-four-foot sections can easily be added to or subtracted from towers to achieve various heights.

Reaching out 164 feet from the tower, each crane can pick up five-ton loads. At lesser distances, they can lift up to 11 tons. The cranes, mounted on rail wheels, move along tracks.

Radio is used by men on the ground to direct the crane operator, who can see straight out and around him, but not down. Each cab is equipped with a transmitter and receiver allowing the operator to talk directly to the groundmen or any other crane. Because signals must often pass through reinforced concrete walls, the radios operate on very short waves in the 450 to 470 megacycle band, which is in the neighborhood of the TV frequencies.

"If there is a large load, requiring the services of two cranes, the communications set-up is such that both operators can receive either combined or individual instructions," says J. R. Gammage, electrical and communications engineer in Generation Projects Division.

Until recently, crane directions were a two-way relationship between operator and the groundmen, who gave hand signals. But as derricks and cranes got taller, the problem of visual contact became acute. Ontario Hydro's first radio communications trial with cranes came during construction of Harmon power station in the James Bay watershed. Telephones are employed at Mountain Chute hydro-electric project for communication from ground to revolver crane cab. Telephone cables, though, are always a problem because of their tendency to tangle.

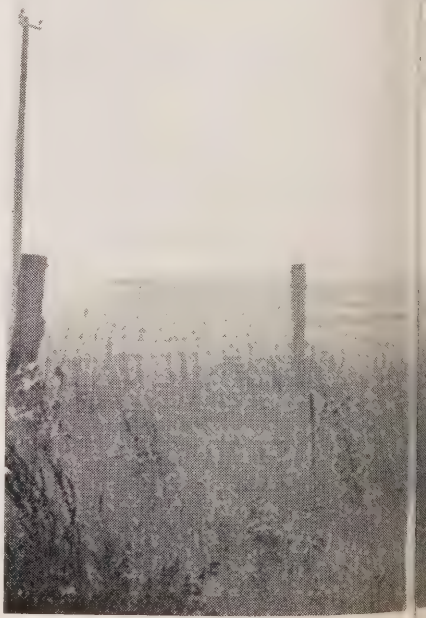
Communications are one problem, balance is another. To balance the boom, 22 tons of concrete are used as a counterweight. A further 60 tons provide a solid base for each machine.

The T-shaped cranes at Pickering will be worth almost $1 million when all four are installed. But the saving in construction costs will amount to thousands of dollars at this project, and thousands more on projects to come.

Guyed derricks and revolving cranes are common sights on any Hydro construction job, but perhaps the mobile crane used to build a 320-foot tall Hydro transmission tower near Sarnia will outrank them all for sheer height. This crane was so unwieldy that a second was called in to help to hoist its 140-foot arm into the air.

The 225-ton transmission tower, with its counterpart on the U.S. side of the St. Clair River, will carry a 345,000-volt interconnection between Ontario Hydro and two Michigan power utilities.

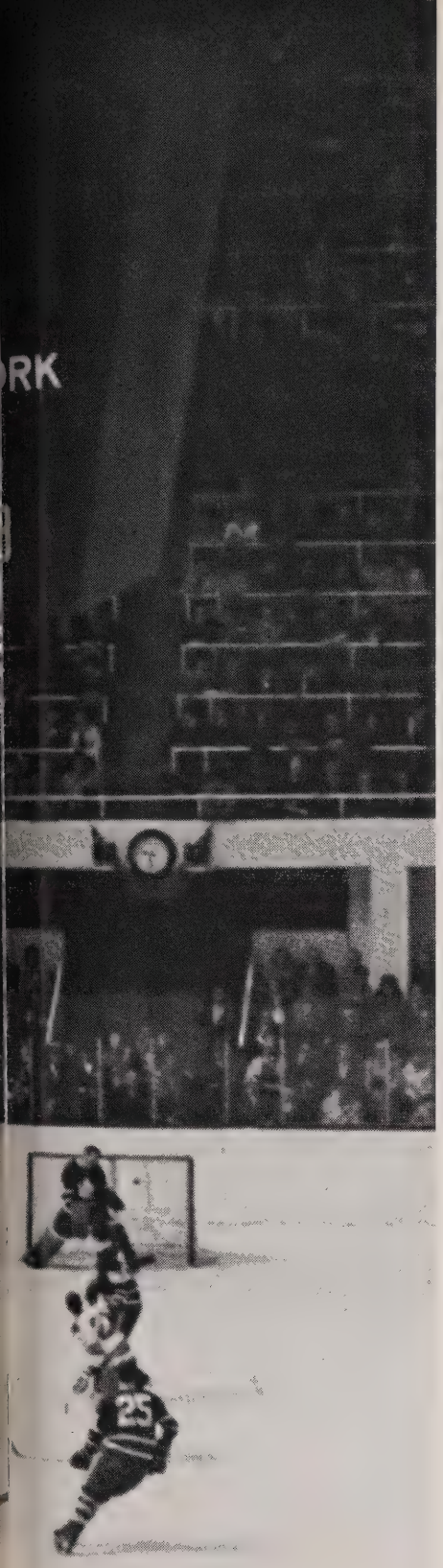
In general construction, especially where high-rise buildings are involved, the emphasis seems to rest with the tower crane. Last year, an aerial survey showed 56 in Toronto alone. And their popularity has long been established in Europe, where they were developed to carry out reconstruction after World War II. □



*Mobile crane, right, stretches its long arm over 320-foot tower built near Sarnia for third inter-connection between Ontario Hydro and Michigan. Below: swinging with the wind when not in use, tower cranes at Pickering G.S. are among the world's tallest.*




PERIOD
2
TORONTO
SCORE
4
TIME TO PLAY
3:12



# keon and kilowatts

by LES DOBSON

**whether it's hockey or the Beatles, wrestling or the Bolshoi, electric power makes the "Gardens" tick**

Empty ice glistens dully under the glare. Ghosts of a thousand shows wreath high above the arena.

Lingering traces of music imported from the Russian Steppes by the Red Army Choir, the Yeah, Yeah, Yeah of Liverpuddlian Beatlese and the magic of the Bolshoi Ballet still permeate the ether.

Music on another scale interweaves as the excited buzz of 16,000 absent fans rises to a frenzied crescendo . . . Keon has the puck, he centres. Mahovlich is there. He *scores!* Another goal for the Leafs!

But the ice is empty. Instead, there's other music, real this time, the music of activity.

"Lunch," says a voice. "Who's got time for lunch these days?"

That's Syd Archbold, chief electrician at Toronto's Maple Leaf Gardens.

"Sure I see all the games," he says, "although it's a bit like working in a candy store. Naturally I'm a hockey fan, but there are times when I'd rather have my feet up at home.

—"Give me that spotlight a minute. It should reflect off the boards, like that."

What's it all about? The electrical people at Maple Leaf Gardens are preparing for yet another winter season. But it's a season beset by difficulties.

For one thing, there's the introduction of color television to big-time hockey.

"We had 108 kilowatts of incandescent lighting and we've stepped that up to 270 kilowatts for the new cameras," says Syd. "We had a dry run not so long ago and . . .

—"What is it, son? Can't get the juice on the lead side, eh? Well, how about doing it this way.

"As I was saying, we had a dry run and replaced every lamp with 1,000-watt photo-floods, which have a life expectancy of six hours. Well, the extra load blew a fuse on the sport timer and . . ."

"Excuse me, Syd," someone says, "about that chime?"

—"Yes, I want the best chime you've got. It's for the directors' room."

He dashes off to solve another problem.

Syd can control his lighting from high above the arena, from the sound or audio room, from the main floor or from the press box. During an NHL game, he sits in the penalty box to control several spotlights, the lighting in the press box, the house phone and a call system to the dressing rooms.

But the addition of $200,000 worth of lighting isn't the only innovation at the Gardens this season. A new sport timer recording the duration of play, the score and penalties has also been installed.

Employing virtually no mechanical parts, this piece of solid-state wizardry is the brainchild of Bob Wood, electronic technician at the Gardens. Bob even designed and manufactured the hundreds of printed circuits used in the sport timer.

No fan can complain that his team is being cheated out of seconds, for at the heart of the timer vibrates a watch called an Accutron that is straight from the space age. Inside the watch are two miles of copper wire one-eighth the thickness of a human hair. U.S. astronauts subscribe to its accuracy, wearing it on trips where an error of seconds may throw them hundreds of miles off course.

Remarkable maybe, but the Gardens is a remarkable place. This buff-colored square of stone was raised in five months at the height of the depression. Its dome-shaped roof is suspended 150 feet above the ground so there are no internal pillars to obstruct the view. One corner of the roof is left free to allow for expansion and contraction.

It's more than just a sports arena. In its time, the Gardens has seen the world's greatest ballet and opera companies, huge political rallies, religious meetings and ice spectaculars.

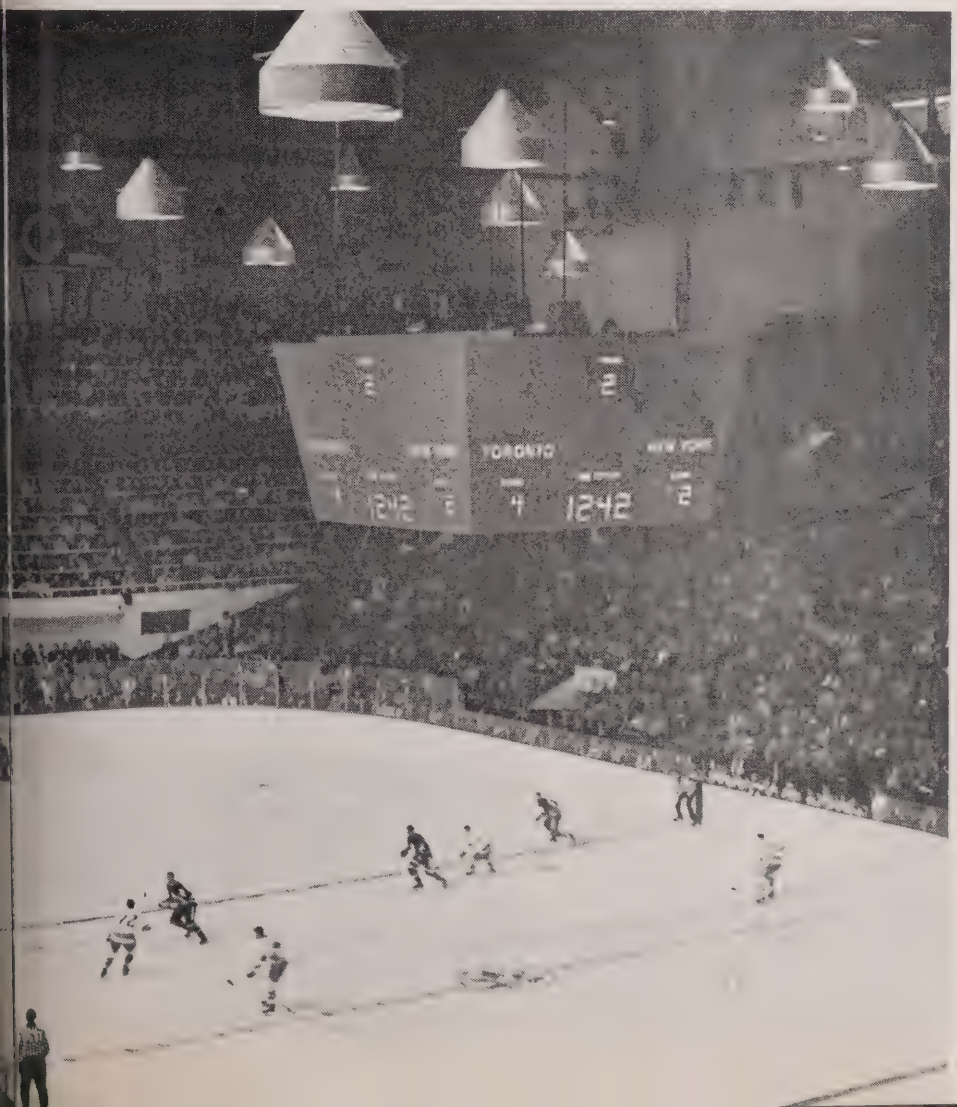

MAPLE LEAF GARDENS


HIGHLAND FUSILIERS NOV


PERIOD
TORONTO
NEW YORK
SCORE
TIME TO PLAY
SCORE
0
20:00
0



*Whether it's lighting or ice-making, escalators or split-second timing, electricity makes the wheels go 'round at Maple Leaf Gardens as chief electrician Syd Archbold, on the phone, can testify.*




Only this year, fourteen bands participated in a marathon rock 'n' roll session there.

When there's a large stage presentation, with its call for special lighting effects, the electrical load tops 1,000 kilowatts — enough to supply about 1,500 homes. Emergency lighting is provided by a diesel generator and during games or performances there's always an engineer standing by in case the arena lights fail.

Ice is an essential commodity for the NHL season. Water is poured on the surface and frozen by brine pipes embedded in the concrete. Three electrically-driven compressors power the ice-making equipment. The surface is then sprayed with a mixture of white paint and water (grey paint is used for color telecasts) and the lines for the hockey rink painted on. Further layers of ice are later added. If the arena is required for other purposes, the ice is covered with three-quarter inch thick sheets of plywood.

Each of the six escalators at the Gardens is capable of carrying up to 5,000 fans an hour. Moving stairways were first introduced between the red seats and the blues in 1956. Further escalators were installed between the blues and the greens the following year and now the management is thinking about building escalators to the topmost grey seats.

"If it hadn't been for the trouble we've had with the lighting and the sport timer, new escalators might well have been under way," says Don MacKenzie, building superintendent and a former captain of the Argos.

Crowds are no problem at the Gardens. Within 15 minutes a capacity throng of 16,000 will have left an NHL playoff and be out of the building.

It takes an army more than 100-strong to run the Gardens during the winter season. Hockey, Highland tattoos, Ukranian dancers, track meets . . . the men behind the scenes take them all in their stride. But, after all, that's what they've been doing for the last 30-odd years. Electricity is one of their biggest and most reliable helpers. □

# commissioners speak their mind

**some straight talk from district OMEA meetings across the province**

## crank complaints

Complaining Hydro customers were spotlighted by A. T. Brown, chairman of Galt PUC, in a panel discussion at the District 6 OMEA meeting at Clinton.

Mr. Brown said that commissions received both fair and crank complaints. The fair ones were easily settled, but crank complaints were costly to every individual in the community.

"Final responsibility for settling complaints rests with the commissioners," he said. "Every complaint must be faced up to and dealt with, although I think you must maintain your rules and regulations and stick by them.

"Only in the most unusual circumstances should you go against a decision by your employees. You should always back them up," he added.

During the discussion, one delegate said that a common cause of complaints was the variation from utility to utility of deposits and connection charges.

Speaking on the need for better liaison between utilities and the local council, H. M. Scheifele, chairman of Waterloo PUC, said: "Due to the rapid growth of towns there should be a very close liaison between council and commission, and it is a lack of such liaison that has resulted in recommendations that threaten the existence of commissions."

Mr. Scheifele said that the mayor, who sat as an ex-officio member of the local commission, could provide a valuable link, while an inter-office memorandum form would pay dividends both for city hall and the commission. One of the best liaison methods was to have a co-ordinating committee.

R. V. Sunley, of Ontario Hydro's Western Region, spoke on financial statements while George Cook, chairman of Preston PUC, explained the intricacies of power billing.

At a banquet after the discussion, Ontario Hydro Chairman George E. Gathercole told delegates: "Combining as it does the agricultural and manufacturing industries, District 6 is a part of Ontario that has been moving forward and it has a tremendous potential." □

## preserving the principles

For his frank and comprehensive appraisal of the duties of local Hydro commissioners in an era of change, George E. Smith, chairman of the Brockville Public Utilities Commission, won hearty applause from delegates attending the annual meeting of the Eastern Ontario Municipal Electric Association in Renfrew.

In essence, he urged delegates to place the preservation of those principles which have made public power such an outstanding success in Ontario above any interest they might have in resisting change merely to perpetuate the status quo in Hydro administration.

"Regional government is inevitable," he said, "and it is up to us to assist in the best way to re-align the boundaries of our utilities in the best interests of sound distribution practices and the economy of the area. If the method of selecting the policy-making body should change, let us not fall into the same classification of some rural township's councils who merely want to perpetuate their own existence. Instead, let us provide the leadership necessary to make the changes in the best interests of public power."

Acknowledging that Hydro commissions were operating in a "slightly different field" than tax-supported institutions, Mr. Smith told his listeners that if they believed this difference was responsible for Hydro's success, it was up to them to see that this message was understood by the public. He called this one of the most important responsibilities of commissioners today.

Familiarity with the statutory authority setting out the powers and limitations of a commission was another responsibility emphasized by Mr. Smith. He said: "It's a great dea to act and to achieve a goal when the r the 'game', so to speak, are known and stood."

He also felt that a commissioner cou better service to the public if he knew tory of public power in Ontario. "It is criticize institutions", he said, "but wl see and understand the toil that it t erect them, then perhaps our criticisms more constructive."

One of the most important duties a c sion performs, Mr. Smith believed, wa power procurement and development. ' the legacy we leave our successors," h "If our choice of applicant for any key p is faulty, then we leave a faulty legacy public and to our successors."

It was the commissioner's role, the s continued, to see that the staff was d good job of planning, business promoti customer service. In general, he shou that the policy of the commission was carried out in a conscientious and manner.

Mr. Smith also touched on communic "It is not good enough for us to oper public's business well", he said, "we mus the public what we are doing as com and frequently as possible and then le be the judge."

## accent on service

Public service was the theme and it wa claimed everywhere from the banner o speakers' rostrum to the colorful book m distributed during the annual meeting Eastern Ontario Municipal Electric A ation in Renfrew.

The theme was dealt with on the conv agenda by a panel and it was referred t and again by the individual speakers.

The panel, moderated by H. A. Harg



*Checking registrations at district 6 OMEA meeting are Clinton hosts Cam Proctor, Don Symons, H. E. Hartley and John Wise. Mr. Symons is mayor of Clinton and also an Ontario Hydro lineman.*



*"Auditing Your Public Service" was the subject of this District 1 panel. From left: W. J. Killough, Ontario Hydro; H. A. Hargreaves, moderator, Nepean Township; W. A. Taylor Peterborough; and Jack Lightbody, Lindsay.*



*Centennial year executive of OMEA district 6, elected at Clinton: Front, J. Fred Edwards, immediate past president, Palmerston; G. D. Sills, first vice-president, Seaforth; George Shepherd, president, Elora; G. R. Cook, second vice-president, Preston; W. J. Isaac, Mitchell. Back: H. E. Hartley, Clinton; H. M. Scheifele, Waterloo; W. J. Mills, Goderich; Mahlon Fisher, Galt; Clarence Lipphardt, Harriston; Archie McGugan, Palmerston; H. J. Shields, Guelph.*

chairman of Nepean Township Hydro committee, examined several specific facets of good service including public relations, commissioners' duties, staff attitudes and the need for consistent and enlightened policy.

It was emphasized that customers today expected more because they were better educated, more sophisticated and had probably lived in two or more municipalities so that they were able to compare utility services. A whole new set of rules applied over those prevailing 20 to 30 years ago, the panel agreed, and customers had a right to expect service built into any product they might buy.

Other speakers on the public service theme included W. H. Powell, Peterborough, with a talk entitled "Training of Personnel to Assure Good Service", and Dr. George C. Fisher, assistant project director of Expo '67. Dr. Fisher applied basic human relations rules to the conduct of a service operation such as Hydro.

Ontario Hydro Chairman George E. Gathercole told the meeting that public service was an appropriate theme within an organization which had set the pattern for utility development across Canada.

The Hydro Chairman brought delegates up to date on the unprecedented expansion program presently underway and he described nuclear-electric development being undertaken in association with Atomic Energy of Canada Ltd. as the equal of any in the world in relation to the size of the provincial power system.

"We look to nuclear power for a major part of our future generation", Mr. Gathercole said, "and we will expand in this area as rapidly as technology and the Canadian capacity to manufacture units will permit."

Mr. Gathercole said that load growth above the long-term average, coupled with deferred in-service dates occasioned by a variety of factors, had resulted in physical plant reserves being "somewhat below what we would like to see." Because of the growing complexity of thermal-electric units, he pointed out, it would be necessary to build up greater reserves than had been required in the past.

Referring to two reports by regional study groups recommending the abolition of municipal utility commissions, Mr. Gathercole said he did not believe they indicated a general "anti-Hydro" attitude.

"They do seem concerned," he said, "about the fragmentation of municipal government through the growth of boards, commissions and other special purpose bodies. I think their main purpose is to restore the authority of local government by returning many of the powers it has handed over to others."

The speaker cited the recommendation of the Peel-Halton local government review, advocating retention of Hydro as a separate commission, although appointed rather than elected, as indicating an awareness of Hydro's unique status.

It was different from other boards and commissions, Mr. Gathercole said, because Hydro was entirely dependent for all of its revenue on its ability to sell its services in a competitive market. It had no mandate to tax. □

## district resolutions

Rural distribution systems more closely tailored to the requirements of the municipal utilities in areas they are likely to annex was the aim of a contentious resolution adopted after amendment at the annual meeting of District 1, OMEA, in Renfrew.

It was pointed out in the preamble that, from time to time in the course of growth of the municipality, it was necessary to annex rural service areas and to purchase the existing distribution systems, whether or not they were adaptable to urban distribution. The resolution suggested that "serious consideration and study" be made (by Ontario Hydro) to construct to the standards of the municip ties with regard to the location of pol primary and secondary conductors, sizi service entrance construction in areas li be annexed. The intent would apply construction only.

More efficient ways of drawing up sta and carrying out other important studies taken by the AMEU with the use of vo members of utility staffs was the sub another District 1 resolution. Its intent investigate possible ways of speeding work in order to improve Hydro's com position.

Nepean Hydro spokesmen, who ori the motion, emphasized that there v suggestion of criticism regarding the qu the work being done by the AMEU, whi renowned in utility circles far beyo province.

Ottawa Hydro originated two resc debated and endorsed at the District 1 ing. The first objected to Ontario Hyd tomer appliance surveys being cor within municipalities where the local carried out its own surveys. The second for closer liaison between the utiliti Ontario Hydro with regard to speci motional programs such as the electric dryer and blanket promotion.

District 6 delegates meeting at passed two resolutions relating to pensic insurance. One called on the OMEA to i ately reactivate its Pensions and Ins Committee, with representation fro OMEA, the AMEU and Ontario Hydro, consider the establishment of a supplen pension plan.

The other District 6 resolution urg OMEA to press for the immediate appoi of the nine-man Ontario Municipal Em Retirement System board provided statute, suggesting that it should incl presentation from the OMEA Pensio Insurance Committee.



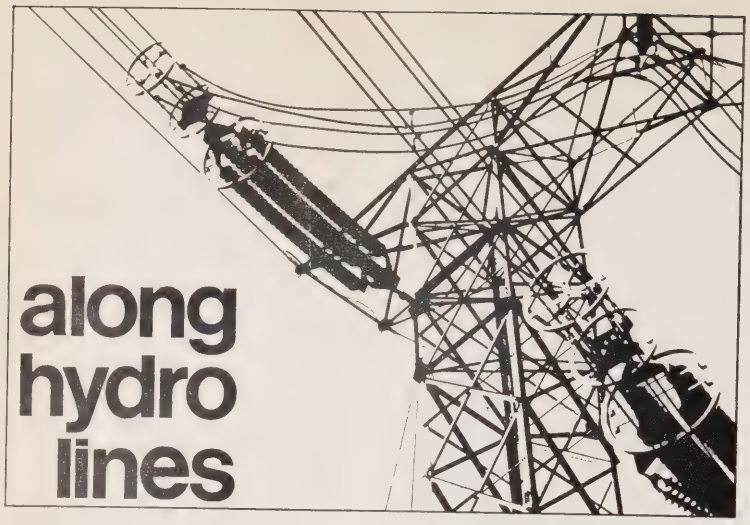
*High finance is discussed at the district 6 meeting by J. Fred Edwards, MPP for Perth; C. Lipphardt, chairman of Harriston Hydro; and Ontario Hydro Chairman George E. Gathercole.*



*Delegates to the District 1 OMEA meeting at Renfrew were able to combine association affairs with a visit to Ontario Hydro's nearby Mountain Chute development on the Madawaska.*



*This is the new District 1 executive elected at Renfrew. Left to right, front: J. R. Philips, Brockville, past president; H. F. Baldwin, Oshawa, president; R. K. Elliott, Deep River, 2nd vice-president. Back: Gordon Nourse, Picton; L. L. Coulter, Ottawa; J. B. Annand, Oshawa, secretary-treasurer; W. L. Andrews, Cobourg; C. A. Baker, Trenton; George Bender, Hawkesbury.*



# along hydro lines

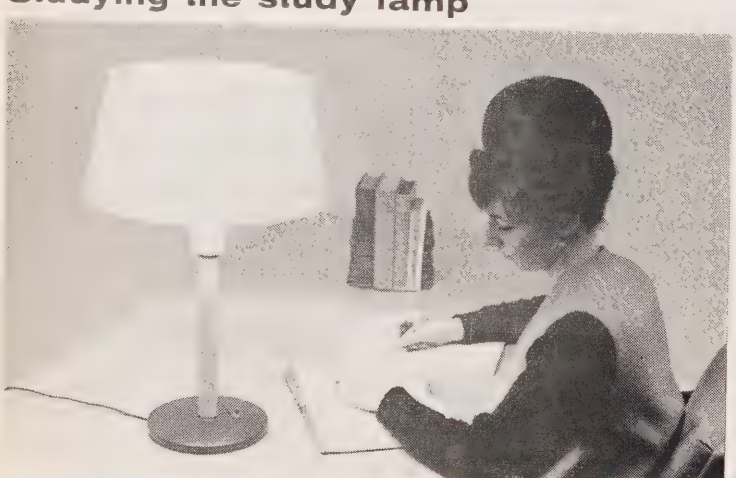
## New nuclear HQ

The Power Projects section of Atomic Energy of Canada moved last month into new quarters in Ontario's research community at Sheridan Park, near Toronto. Previously the division had been working in temporary locations in the west end of Metropolitan Toronto.

Situated on a 17-acre site, the $6 million centre consists of a three-storey design office and a separate development laboratory. High-pressure steam and water loops have been installed in the laboratory for the testing of nuclear power station components. About 700 engineers, scientists, technicians and supporting staff occupy the new buildings.

J. L. Pepin, Minister of Energy, Mines and Resources Management, who opened the centre by starting up the main water loop, termed Sheridan Park "a door through which industry may pass to participate in the growing nuclear program." □

## Studying the study lamp



*High marks and good lighting go hand in hand.*

A new high-intensity lamp designed primarily for students has been test-marketed in 13 stores around Kitchener, Waterloo, Guelph and Galt. The lamp is sponsored by Ontario Hydro, the Ontario municipal electrical utilities and Hydro-Quebec in co-operation with the Canadian Electrical Association and provides a high-intensity, glare-free light over an average desk surface.

Designed by Lightoliers-Canada Limited, the lamp has been certified by the Electric Testing Laboratories in New York and will carry a CEA label. The Quebec tests are being conducted in the Three Rivers region, which has a population of about 100,000. □

## Hydro commissioners honored

Hydro commissioners from five Eastern Ontario municipalities were honored for long service at the annual meeting of District 1 of the Ontario Municipal Electric Association in Renfrew. District 1 represents utility commissions



*They stand for public service.*

in an area stretching from Hawkesbury to Ajax and as far north River.

The commissioners received scrolls acknowledging 15 years of o ing service in the public utilities. The scrolls were presented b Cliff, first vice-chairman of Ontario Hydro. Shown receiving their left to right, are: Louis Peterson, Almonte; E. J. Bryant, Whitby; E. E Eganville; K. E. Edmunds, Norwood; Mr. Cliff; and D. Storie, Lanark.

## Atoms in the market place

Just how does the Canadian nuclear power reactor rate in the market place? According to J. L. Olsen, marketing manager for C General Electric's atomic power department, it is one of the lead or three designs. Speaking at the AECL symposium on atomic po said the real test will come when three bids are reviewed in Finla three competitive types are enriched uranium reactors from the States and West Germany and Canada's design using heavy w moderator and natural uranium as fuel. Bids from six other countri already been eliminated.

Mr. Olsen said that during the next 15 years, the Western world for atomic power is expected to be 200,000 megawatts, compare today's existing electrical capacity of about 600,000 megawatts appears to be one of the few opportunities that Canada has of con with the major world powers in a highly technical field that req large capital commitment," he added.

## Long name, small town

Ontario Hydro will build a small town at Chub and Jobammegeeshig ( lakes to house staff working on a $26 million hydro-electric sta Aubrey Falls, midway between Chapleau and Thessalon.

The site, on a peninsula between the two lakes, is within easy re Aubrey Falls and is conveniently situated for possible future develo at Gros Cap and the existing George W. Rayner plant, further down on the Mississagi River, says Hydro Chairman George E. Gathercol Department of Lands and Forests has approved the site.

Accommodation will be provided for a total workforce of 450, inc about 125 families. Single men will be housed at the constructio Buildings at the 75-acre townsite will be complete with electricity, and sewage treatment facilities. Mr. Gathercole emphasized that will work closely with the Ontario Water Resources Commission to polluting either of the lakes.

One of the conditions of the Department of Lands and Forests wa an independent body be established to evaluate any claims by operators on the lakes as a result of the power development.

## Churchill Falls tap turned

The tap that will ultimately release more than seven million kilowati the continent's power grid has been given the first positive turn l Quebec Provincial Cabinet.

Premier Daniel Johnson announced that Hydro-Quebec has sign agreement with the British Newfoundland Corporation to buy all s

wer from the mammoth development at Churchill Falls in Labrador. When mpleted, it will be the largest single-site power plant in the world, nerating more energy than Egypt's High Dam (not yet completed) and U.S. Grand Coulee Dam combined.

Officials expect it will take five years before first power is produced. The ject will provide jobs for 5,000 men.

Mr. Johnson said Brinco will spend between $600 million and $700 lion to develop the site and Quebec will spend $350 million on lines to nsmit the power from the Quebec-Labrador border, through the province to markets in the U.S.

The project became feasible a few years ago when Consolidated Edison, New York, said it could absorb 1,492,000 kilowatts annually, paying $60 lion for it. This deal, however is uncertain because of delays in getting power project underway. □

## traight and narrow

re's more to a plowing match than cutting furrows. But the straight narrow did count for Barry Timbers, of Mount Albert, who won the ario Hydro trophy at this year's international competition at Seaforth.

mong the hundreds involved in the planning and preparation for the nt were Ontario Hydro crews, who installed 400-kilowatt electrical ser- for a tent city and other buildings on the site.

Workmen put up nearly two miles of line and installed 20 transformers exhibitors needing commercial power. Lighting was erected along a of temporary streets. Ontario Hydro has co-operated with farmers 41 years, supplying power for the plowing events. □

## egional manager retires

. Ferguson, manager of Ontario Hydro's Georgian Bay Region, retires month after 43 years' service. He will be succeeded by Frank Dobson, has been acting as his assistant for the last two months.

l but Mr. Ferguson's first two years with Hydro were spent in Georgian He joined Hydro as an engineering apprentice in 1924 after graduation



a: Dobson



J. C. Ferguson

Queen's University. He was appointed operations engineer of the -established Georgian Bay Region in 1947 and has been regional ger since 1955.

Ferguson has served on Barrie Town Planning Board and the board rrie Y.M.C.A.-Y.W.C.A. He is a member of Barrie Curling Club and a gardener.

Dobson, who received his engineering training at the University of rto, joined Hydro in 1942. He has served in a number of capacities ling resident engineer at the DeCew Falls No. 2 hydro-electric devel- nt and project manager at both the Chenaux and Sir Adam Beck No. 2 stations. For three years he was construction manager at Lakeview n leave of absence for the last five years, he has been working in as chief executive of the Volta River Authority and chairman of the National Committee on Large Dams. □

## Batting high



*Nepean Hydro sets a sizzling pace.*

Nepean Hydro is now batting 500. They hit that mark with what the builder calls a model K-3 of Spanish-inspired design. But to the layman it's a four-bedroom electrically heated home.

K-3 was the 500th all-electric living unit connected to the Nepean system and it gave the Ottawa area utility the right to claim one of the highest, if not the highest, percentages of all-electric homes in the province. Nepean Hydro serves about 13,000 customers. Approximately 3.7 per cent of all individual living units in the township are electrically heated and 40 per cent of all new residential building is all-electric. □

## municipal briefs

**Ratepayers in Pembroke** have voted to buy the town's power distribution system from the Pembroke Electric Light Co. for $1.95 million. The plebiscite gives the council authority to name a three-member commission to purchase power from either the company or Ontario Hydro.

**There's a full program** for the seventh Electric Heating Conference being held at the Inn-on-the-Park, Toronto, November 27 and 28. Among the highlights is a detailed presentation of Ontario Hydro's electrical home modernization plan while technical discussions and a film are also on the interesting agenda.

**Dresden PUC** has built its own substation to replace one rented from Ontario Hydro. Manager Fred A. Bridle says the substation will save the town "a considerable amount" of money each month and could result in eliminating a potential rise in power costs.

**James Cameron,** who has been 28 years with New Toronto PUC, will retire as accounting and office manager on December 30. He has also been active with Toronto-Lakeshore Boy Scouts and with Progressive Conservative associations in the Lakeshore and Peel County. New Toronto PUC will be absorbed by Etobicoke two days after his retirement.

**Georgetown and Sioux Lookout** have joined the list of Ontario communities sporting all-electric schools. Both buildings were opened at the beginning of the term and put the province's number of all-electric schools over the 250 mark. Centennial School at Georgetown contains seven classrooms for 231 pupils while its northwestern counterpart, Central Public School, has 16 classrooms for 504 pupils.

**Beginning January 1,** Waterloo, Galt, Guelph, Hespeler and Preston will all have identical purchase and flat rates for water heaters, enabling them to enter a regional promotion program.

**A four-day workshop** on space conditioning will be held November 29 to December 2 by the Canadian Electrical Association at Toronto's Inn-on-the-Park. Two days will be devoted to residential and commercial electric heating and a further two days to air conditioning.

**In a recent editorial,** The Stayner Sun made a good case against including utility revenue in a municipality's general fund. It said, in part:

"Because town councillors are always elected if they promise to keep the taxes as low as possible, Stayner councillors (for about 50 years) used the revenue from the water system for general fund purposes

instead of providing for depreciation, replacement and expansion. Finally, when the need of extensive replacement and expansion of the system had reached a point where great gobs of money had to be spent, the town dumped the system on to the Hydro Commission and renamed it the Public Utilities Commission.

"This, in our opinion, was the best move council ever made. Over the last decade the commission has transformed an obsolete water system into one that, while not yet perfect, at least can guarantee a bit of water for drinking and washing."

**Ontario Hydro's** Elmira and Kitchener areas will cease to exist next month. As announced last year, the merging of the two areas with adjacent ones will be completed on December 15. The move is in keeping with similar consolidation across the province and is being carried out in the interest of economy and improved efficiency.

**East York Hydro** has completed a deal wherein, for a difference of $75,000 between the purchase of one property and proceeds from the other, they will end up with more than twice the former floor space, almost three times the land area and a much greater scope for improvements and expansion. The utility's present facilities are deemed inadequate and the new property will provide for centralized servicing and warehousing.

**Port Arthur's** handsome public utilities building is no longer hiding its light under a bushel. Instead, a new floodlighting system incorporating 38 quartz lamps now brings the building to the attention of Lakehead residents long after the surroundings have succumbed to the dark. Installed as a part of the Operation Aladdin program being carried out in various municipalities to make people aware of the effectiveness of decorative lighting, the PUC lights will remain in the nature of a Centennial preview.

**Harry Nymark**, former Town of Dryden Hydro and Telephone Department manager, was honored recently by the town on his retirement. He was presented with a television set by Mayor Durance.

**Mrs. Grace Hartman** has been appointed mayor of Sudbury — the first woman ever to serve in this capacity. She was elevated from her elected position of controller and deputy mayor at a special meeting of city council. She succeeds Mayor Max Silverman who died after a month-long illness, in Toronto. A former teacher, Mrs. Hartman is assistant director of the extension department at Laurentian University. □

## Helicopter bridges St. Clair River



*A rope came first.*

Ontario Hydro linemen worked in a cold, gusting wind, 300 feet above the ground near Courtright recently as conductors were installed to link towers on either side of the St. Clair River, the natural boundary between Southwestern Ontario and Michigan.

The 320-foot towers are part of a grid between Ontario and Michigan which spans the river 17 miles south of Sarnia, and three miles south of the $218,000,000 Lambton generating station now under construction.

The interconnection, the third between Ontario Hydro and the Edison power company, will carry 115,000 volts when it op December. When the Lambton generating station starts produc 1968, the line will be operated at 345,000 volts.

Actual line stringing across the river was accomplished by an Hydro helicopter which pulled a one-inch rope from the Canadian the tower on the U.S. side, a distance of a half a mile. The rope wa to pull a series of cables which eventually tugged the reinforced alu conductors into place.

## Hydro veteran steps down



*He did a big job for a long time.*

Colleagues from municipal utilities across the province paid tribu Scarborough PUC manager Ronald Harrison at a testimonial din the Royal York Hotel, Toronto. Mr. Harrison is retiring early next after 44 years with the Scarborough utility.

At the dinner, which was organized by past presidents of the ciation of Municipal Electrical Utilities, Mr. Harrison, himself a president, was presented with an illuminated scroll by R. S. Rey manager of Chatham PUC. The 60 guests also saw him receive hor life membership in the AMEU.

Mr. Harrison is shown at left in photograph with AMEU Pres E. F. Burbank, centre, and Dr. J. E. Wilson, president of the OMEA.

Tributes were paid by D. J. Gordon, Ontario Hydro's assistant ge manager, marketing; former Ontario Hydro chairman W. Ross S E. F. Burbank, president of the AMEU; and M. W. Broley, chairma Scarborough PUC. During the dinner, a cable was received from Or Hydro vice-chairman D. P. Cliff, who was attending the World P Conference in Japan.

Mr. Harrison was born in Toronto and was educated at Pari Collegiate and the University of Toronto. He started his electrical c with Ontario Hydro in 1921 and two years later joined Scarbor PUC as waterworks superintendent. He is extremely well know electrical circles and for relaxation enjoys travel, reading and fishi

Mr. Harrison will be succeeded by T. J. Curtis, former manage New Toronto PUC.

## September energy production

Primary energy provided by Ontario Hydro in September totalled 3.77 billion kilowatt-hours, an increase of 7.8 per cent over the same month a year ago.

For the first 9 months of 1966, the total is 35.04 billion kilowatt-hours, up 10.4 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand in September was 3.99 billion kilowatt-hours, 1.1 per cent less than the previous month.

The seasonally adjusted total for September represents 47.92 billion kilowatt-hours at annual rates. This is 344.46 per cent of the energy demand in 1949. □



# off the wires

Employee suggestion plans have proved their rth time and again and the one here at Hydro no exception. But we were somewhat surprised find that money-saving ideas need not necsarily emanate from the near-genius nor deal th matters of a technological profundity calated to tax the capacity of a 350 horsepower mputer.

Having assumed that any submission worthy of nsideration by the suggestion plan brain trust uld deal with matters no less complex than, y, an electro-dynamic method of establishing e atomic weight of super-heated alloys irrective of their molecular structure or their ility to absorb radiation, pickled or unpickled, were at once disillusioned and reassured by e facts.

Take the case of the carpenter at Mountain ute. He pocketed $35 for suggesting that a rtable toilet be placed near the carpenter shop save time as the existing comfort facilities re located some distance from the work area. Now there's the kind of idea we can come to ps with. The experts estimate that Hydro will nefit to the tune of $175 in six months by lucing the job-to-john distance at Mountain ute.

And refinements immediately suggest themves. How's about a battery operated jerry-one-job capable of being wheeled up to the lividual worker at the appropriate time so that ture's needs could be looked after without any erruption whatsoever to the rhythm of hammer saw?

All told, a healthy 18,000 suggestions have en put forward by Hydro employees since the n's inception in June, 1957, and 3,900 of these ve been adopted. To date, Hydro has shelled a total of $160,000 plus for ideas and when challenged Frank Galbraith, who co-ordinates whole business, for some kind of a rough imate into possible savings accruing to the mmission as the result of employee suggesns, he hesitated for almost half a second ore replying—"$1,105,405". This, he took pains point out, was based only on savings effected one year after the new way of doing things been introduced.

No beating about the bush here and as a porter we appreciate it. But we couldn't help ndering about that last five spot. If the carters had been required to walk just another or two we might have ended up with a nice nd figure.

And for those who may have been reluctant enter the bucks-for-brainwaves market on unds similar to our own, Frank has a word of ouragement. Almost invariably, he points out, biggest awards have gone to the simplest gestions.

Having just returned from a safari to the Maritime provinces, during which we peered under every toadstool and pinecone from Cape Dixie-Me-Fancy to Billy MaGraw's Heath without drawing a bead on anything meatier than a six-point fieldmouse, we found some of the local hunting accounts rather disheartening.

One involves a Toronto man who recently bagged a fine fat Canada goose within sight of the new city hall and without firing a shot. It seems this fellow made a habit of feeding the wild but high-living honkers inhabiting the city's waterfront area. When one particularly choice bird ventured near, the culprit whipped out an arm, grabbed the goose by the neck, and tossed it nonchalantly into the back of his station wagon.

Fortunately for our peace of mind, he didn't get away with it. His licence was jotted down by, of all people, a Hydro inspector, and police later found the big bird unharmed but indignant in the goosenapper's garage.

The goose was let loose after admonitions from the constabulary to the effect that bare-handed goose grabbing wasn't considered cricket in these parts. Still, one can't help wondering what kind of feed he was using.

■ Equally disconcerting to one recently returned meatless from the hunt is the wild kind of an item we found in the latest issue of the Nor'wester, Hydro's employee magazine for the Northwestern Region. If we interpret the report correctly, a Hydro type is alleged to have bagged seven partridges with a single blast from a 410 gauge shotgun.

Now the 410 is a weeny little gun designed originally, we suspect, for the ladies, and if this gentleman from the Northwest did effect the demise of seven grouse with one shot, then he must have aimed each pellet at an individual bird. Even then, there would scarcely be enough lead to go around.

It is conceivable, of course, that the grouse were perched in a tree, one above the other, so that, in falling, the top bird rendered the next lowest hors de combat—and so on down the line. In any event, it takes some of the lustre from the big six-point fieldmouse we toted home from the Maritimes and suggests that we should direct future efforts closer to home. One thing is sure —they tell a better story up this way.

■ And who knows — in a few years we may be hunting wild pigs in the backyard if the efforts of two Hungarian-born Canadians in the Bayham Township area bear fruit. They are raising European wild pigs on the theory that these ferocious tuskers would make a welcome addition to our game animals. Certainly, with the cost of bacon being what it is, a 500 pound porker lashed to the car roof would raise a few envious eyebrows.

One thing we did find out on our Eastern junket was that Ontario has no monopoly on idiots. There, too, the electrical and telephone utilities are plagued by hunters specializing in glass insulators.

One cure we heard suggested was that these marksmen be forced to down a stew concocted from their "bag". For seasoning, we would suggest a dash of wire insulation with just a touch of copper filings.

Nor are public relations problems confined to our bailiwick. The New Brunswick Power Commission made headlines recently in bulldozing a giant manure pile in an area to be affected by a power development. The owners, from what we can gather, were at the top of the pile.

■ What will it be, color television or sex? According to one researcher, too much television watching can cause brain damage and upset the sex cycle. Rats placed in a cage immediately in front of a color TV set became extremely lethargic in thirty days and suffered severe brain damage. Other rats, shielded by lead, showed lesser damage over a longer period.

In a second experiment, female rats placed 15 feet from the set, and separated by two standard wall partitions, had litters of only two, as opposed to their normal litters of 8 to 12. The researcher speculated that radiation from the cathode tube caused the damage. He said an international committee on radiation had recommended that TV viewers remain at least six feet from the set and not watch it longer than 2,000 hours a year.

If the report has substance, the birth control pill may be on the way out. It will be interesting to see which the ladies find hardest to take — the pill or 2,000 hours of television. Now we know why they call them idiot boxes.

■ In Quebec, the paper "Executive Briefings" points out, French is primarily a language of love, emotion and manners — not business. And if the examples presented are typical, we would have to agree. Commenting on the difficulties of preparing bilingual catalogues, the paper cites the case of the electric kettle.

In Gaspe, we are told, an electric kettle is une bombe electrique, while in Montreal it's un canard electrique. Now, if our high school instruction remains valid, une bombe is a bomb and un canard is a duck. The Gaspe kettle is feminine while the Montreal version is masculine.

Choosing between an electric bomb and an electric duck is confusing enough without the sex problem.

■ While laying no claim to electric ducks, England has announced a new device likely to ruffle a few feathers. It's a compact, automatic, all-electric chicken plucker capable of plucking 6,000 chickens per hour. Anyone who had done any plucking knows that this represents something of a breakthrough. Whether or not one could pluck a duck with the chicken plucker makes for some interesting conjecture.

■ Finally, on the same subject, we are indebted to the "Longlac Echo" for this philosophic gem. "Success in life depends on two things — luck and pluck — luck in finding someone to pluck". □

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**the cover**

We are indebted to staff photographers Harry Wilson and Gary Smith for this study of 19th century toys. They are from the Percy Band collection and were photographed at Pioneer Village of the Metropolitan Toronto Conservation Authority—their permanent home. Most toys are replicas of articles in everyday use and so reflect the period in which they were made. For more on this fascinating subject, please see page four.

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## a christmas messag
## from the chairma



"Peace on Earth—Good Will toward Men": th
simple message of the first Christm
has an irresistible, universal and endurir
appeal. Each year it helps us to ha
compassion, to keep faith, to count o
blessings, to share the joy of giving, ar
in the process, to make our lives rich
and more rewardir

May we extend to you our sincere be
wishes for A Merry Christmas and healt
and happiness throughout the New Ye

George E. Gathercole

# UFOs in the london area?

Etched against a sullen sky, three basket-shaped objects were observed recently in the London area climbing slowly upward in tight formation and with their straining engines clearly audible. Then they would swoop downward almost to the earth but maintain the distance separating them with uncanny precision. Their roller-coaster progress was followed by reliable eye witnesses for more than 60 miles.

These UFOs were, in fact, firmly anchored to one of Ontario Hydro's high voltage transmission lines and there were no little green men at the controls. But the truth is as strange as the fiction in this case. After all — how many of us have made the return journey between London and Sarnia by cable car?

Inspiring the Great Cable Car Journey was the tendency of a certain transmission line to vibrate.

"You could put your hand on the towers and feel them tremble like a shivering dog", says Keith Campbell, district line maintenance engineer. "In time, of course, such a state of affairs would play havoc with the lines and so we decided to install more efficient 'dampers', those dumbbell-like contraptions you see on many lines across the province. But this is the first big job we carried out with cable cars.

"We paid $10,000 for the three cars and laid down the design requirements ourselves," he explains, "but the savings in time have been substantial and I think they will be very useful on other occasions."

The cars travel the lines on one side of the towers until they reach their destination and return on the other side. The lines, of course, are de-energized but at night the cars can be left suspended while 230,000 volts surge through the lines.

The cars, developed and evaluated in prototype by Hydro engineers and the manufacturer, Timberland Ellicott, of Woodstock, would have been used earlier this year to place dampers on power lines running between Cornwall and Hinchinbrooke, north of Kingston. However, considerable development changes were required and teething troubles were encountered with the hydraulic system (a gasoline engine powers a hydraulic pump



**...not really, but these daring young men in their "flying" machines drew many a curious stare**

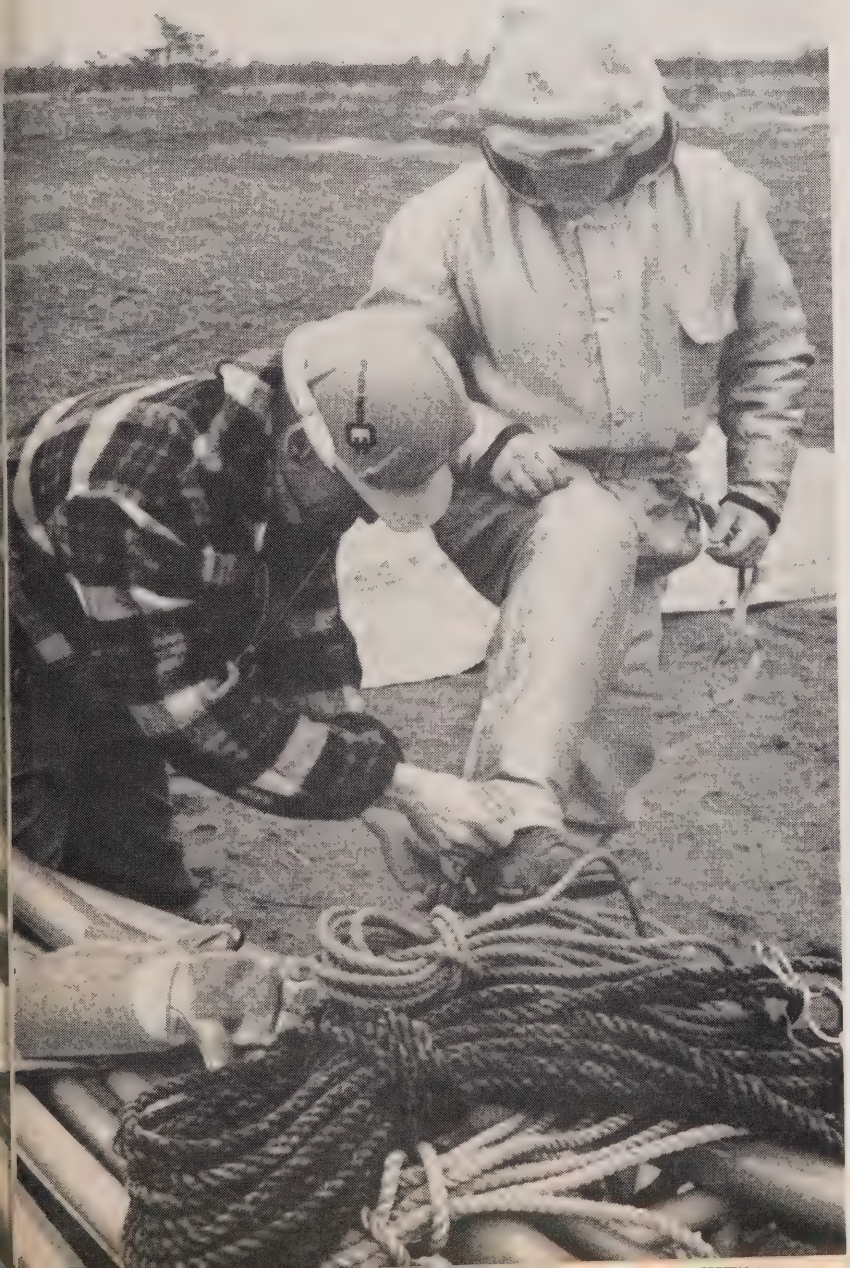
## skyriders in hard hats swoop over section of Southwestern Ontario

*Closer up, these motor-driven cable cars take on their real identity as important line maintenance tools. Pulleys allow them to "spider" their way around insulators at the towers. They were used to ferry linemen affixing "dumbbell" dampers.*









which, in turn, runs hydraulic motors attached to the wheels). These have now been solved.

What with the weight of the car and its operator, the bottom line will sag to within 15 feet of the ground between towers. This can be inconvenient, especially when crossing a road or another power line, so ropes are attached to allow the topmost drivers to hoist the lower car over obstructions.

Proximity to the ground does have some advantages, though. The lowest driver uses the ropes to transfer to his workmates anything from tools to lunch pails and soft drinks hauled up from the ground.

How do the cable cars manoeuvre around the bulky strings of insulators on high-voltage lines?

The secret lies in sets of hydraulically-operated pulleys. When the car reaches an insulator, the front set of wheels is moved spider-like from the cable and swung around the insulator while the other wheels carry the weight. Then the car inches forward while a second set repeats the process.

It is possible that future applications, such as the detailed inspection of power lines, may be found for these cable cars, thought to be the first of their kind to be used by any electrical utility. But Hydro is usually well to the fore in line-maintenance techniques.

About the same time as the cable car trio was wending its bizarre way across the fertile farmlands in the London area, other Hydro linemen were proving to electrical experts from Britain, the United States and elsewhere in Canada that they could work safely with their bare hands on a live 500,000-volt line.

The demonstration, staged particularly for a nine-member British delegation, took place 90 swaying feet above the ground on part of Hydro's 435-mile extra-high-voltage line near Sudbury.

Highlight of the show was the sight of a lineman, wearing a metallic shielding suit, zipping along the wires in a hand-propelled 28-pound cable car. This method of conveyance has great advantages because large sections of the line cross rugged terrain inaccessible by truck.

Live-line work on the EHV circuit is important to Hydro as well as to customers, avoiding interruptions that would mean replacing low-cost hydro-electric power from rivers in the James Bay watershed with more expensive energy from coal-burning power stations.

It all adds up to progress. And whether it's with cable cars, bare-hand techniques or replacing foot-slogging line patrols with the efficiency of helicopter inspection, the boys of line maintenance are keeping Hydro ahead. □

*Protagonist in a drama staged 90 feet above the ground suits up for demonstration before British and U.S. utility men. Hydro crews worked safely with bare hands on live, 500,000-volt line near Sudbury.*

*Great-grandmother might have played with the toys in this window. Like the others shown on these pages, they're from the Band collection at Pioneer Village near Toronto. Called a "Gloria" machine, the magic lantern, opposite page, was powered by a kerosene lamp — which accounts for chimney.*



## there's more to a toy than me the eye as the author points out in this account of playthi down through the ages

Some time after dawn on Christmas m there will be a scurrying of little feet in dian homes and anxious whispers of Santa been?" Gay wrappings will fall floor, eyes will pop and smiles spre Christmas toys are opened.

The giving of presents on December 2 custom that has been going on since before the birth of Christ. As a matter o December 25 is not the birthday of Ch was a pagan festival chosen by Bishop I ous of Rome as suitable for adaptati honoring the birth of the Savior. In tianity, the giving of gifts at Christmas from the presents the three wise men c to the manger.

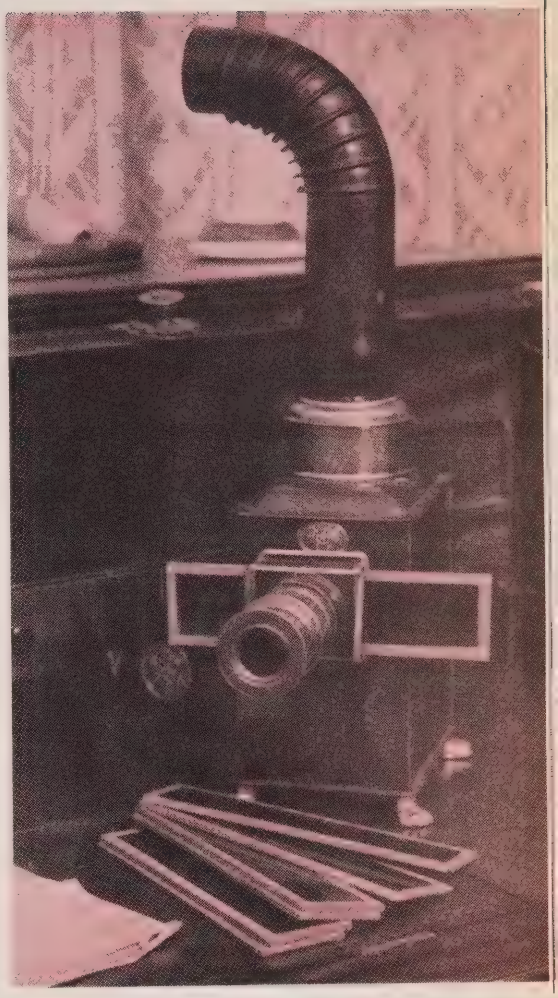
Though most adults think relatively about them, toys represent a fascinating term study of the progress of man. Fo playthings beloved of the small-fry ha often been replicas of the bigger achieve of their elders.

Nor have toys always been designe children. In earlier days, adults liked toy the true meaning of the word being a thing, a trifle or a trinket. Into this cat falls the famous steam toy of Heron of andria. Centuries before either steam o engines were thought of, Heron comb both principles in his toy. Water was he in a sphere and steam was jetted from sides, causing the sphere to rotate. It ha practical use and was, therefore, an adult

Similar to this sort of plaything were little electrical wheels, immensely popula drawing rooms in the time of Queen Eliza I of England. Electricity was produced drew forth oohs and ahs long before it wa garded as a practical form of power.

Toys for children were, of course, made by proud fathers. Sometimes, too, cr men in their guilds made toy replicas of t regular, full-size productions for sale at Ch mas time. Many of these toys were beautif made and quite heavy — not what we wo consider suitable for children.

One of the finest collections of toys in world is at Black Creek Pioneer Village



# toys at christmas

by SHEILA KENYON

Toronto. They were gathered by the late y C. Band, and include items not only Canada but from Europe and the United s. There are old fire engines, horse-driven ies, steamboats, coaches, tin soldiers and ons that great-grandfather played with.

hough toys change, children don't and so e are certain general kinds of toys that always been popular. Moving toys are as as the wheel itself. Children love some- that offers action. Baked clay chariot have been dug from the ruins of Thebes. Romans made their children toy horses heels (so do we). Long before we thought e electric battery toy, the early Chinese, ks and Egyptians automated their toys quicksilver and water. As steam and work became available these were kly adapted to toys.

long with improvements in motive power gone improvement in materials. Wood, used, is one of the oldest materials. In the 19th century, makers used a good deal n. Toward the beginning of the 1900s, toy ies were cast in iron. It was not until the s that makers turned back to lighter ls and alloys for cars and pull-toys. And, urse, after World War II the now indis- able plastic became popular. For some s of toys it has just about everything — ness, color and durability.

e toy industry as such probably stems Nuremberg in Germany, which is men- d as early as 1413 for its finely-made . In fact, Germany was for centuries the e of toy-making, which didn't get started orth America in a big way until World I when German supplies were shut off.

ys tell us something about human psy- gy. It is a melancholy fact that war toys always captivated boys. Today it's ba- as, tanks, rocket launchers and six-guns. arlier ages there were wooden swords, 's and bows and arrows. Small boys have ret desire to be well armed. G. K. Chester- nce said: "It might, in some circum- es, be dangerous to have a little bow. It ays dangerous to have a little boy."

rls, traditionally made of sugar and spice, dolls, dolls' houses and toy replicas of er's appliances. Little girls want to copy mothers, to look after baby, wash and clean house and bake.

years gone by, toy dolls, for the most were poorly made. Grandma's doll was made of rags, wood or papier mache. About the middle of the 18th century porcelain began to be used for dolls' heads but not for the bodies. Black hair, blue eyes and fresh complexions were popular.

Today, plastic makes possible a much more lifelike face, bodies are more carefully made and the preference is for blondes. Modern dolls on sale this year can talk, walk, cry, open and close their eyes, and burp most realistically.

While dolls go back to prehistoric days, the doll's house is a relatively modern toy, the first one appearing about 300 years ago. Before that time little girls played with reproductions of a single room, usually the kitchen. Perhaps cost was a factor and the complete doll's house, with every room furnished, is a sign of the rising standard of living.

Before toymakers produced dolls' house furniture as such, master craftsmen were making miniature reproductions. In Holland and Britain silversmiths did good business producing toy-size fire-place sets, kettles, sledges, chairs, tables and similar pieces. These glittering toys are now art treasures.

In the Band collection there is a doll's house built by Mr. Band from a design drawn in 1855 and furnished with skilful reproductions of period furnishings down to coal-oil lamps.

Little girls love stoves too. By the middle of the 19th century manufacturers began producing toy copies of their full-scale iron cook stoves. In the Band collection is an 1880 Jewel range in toy form that looks every bit the monster that great-grandmother used. Also in the collection are toy pots and pans and a very unstreamlined toy coffee grinder.

Today, a little lady who wants to prepare supper for daddy can do so with a CSA-approved oven equipped with two 100-watt light bulbs that actually cooks pies, cakes, candies and pizzas. One such stove comes complete with utensils. Just add water to cake mixes and cook. For smaller children, there are realistic non-heating stoves with matching refrigerators and sink units, all in modern decor.

Great inventions have often been reflected in toys. In Britain the invention of the steam train led to the introduction of toy train sets which enjoyed an astonishing and continuing popularity. They have been produced with steam, clockwork and electricity for power.

In 1907, Eaton's "Toyland News" heralded

*In terms of wardrobes, today's dolls have nothing on this little lady of the mid-19th century. The clothes directly reflect the fashions of the day — down to the corsets imported from France. Copied from a Currier print of 1855, the doll's house is an exact replica of a well-to-do home of the era — from banjo clocks to daguerreotypes on the walls.*





the electric train with the words "electri all the go now."

While toy trains are still popular, it's u standable that in this automobile age, th car and especially the electric road rac should have surged into the lead in popul Toymen believe that the competitive app the road race has given it a decisive edge trains. One manufacturer has 12 desig road race sets to choose from, and fo smallest children has a battery-operated set.

Also popular today are truck combin sets — dumptrucks, express trailers, c and bulldozers. Canada is a nation in the of a building boom, so our sons want to part of it.

Aside from the tried and true toys w have been with us for years, there are d of new and novel ones — in fact, there more toys every year, a circumstance ba to parents and delightful for children.

How much should you spend on a chi Christmas? That's a problem to be settle tween you and your pocketbook, but reta say most Canadians spend between $10 $12 per child. And, if it's any solace in face of a diminished bank account, you feel patriotic: "Most toys on Canadian she have been manufactured in Canada," Peter Stevens, director of the Canadian Manufacturers' Association. The industr this country now accounts for many mill of dollars worth of sales annually and cre jobs for Canadians.

How should you choose a toy?

"Realism is the big thing," says B Clarke, marketing manager of Topper T Limited, of Toronto. "Children, more t ever, want to do adult things."

If dad drives a truck, something automo will go over big with the small ones. If m makes her own dresses, a toy sewing mach — and there are some really good ones on market this year — is just the thing. For wo ing mothers who type in offices, there are e working toy typewriters available for to $30.

And in case there is a computer exper the family you can buy junior a Digicomp, operating digital toy computer that can programmed to do simple arithmetic, me orize, play games, teach new math, answ riddles and provide dad with endless fun the long hours after junior has gone to bed.



# he stonehenge of rexdale

## where linemen play asketball to gain onfidence in their afety equipment

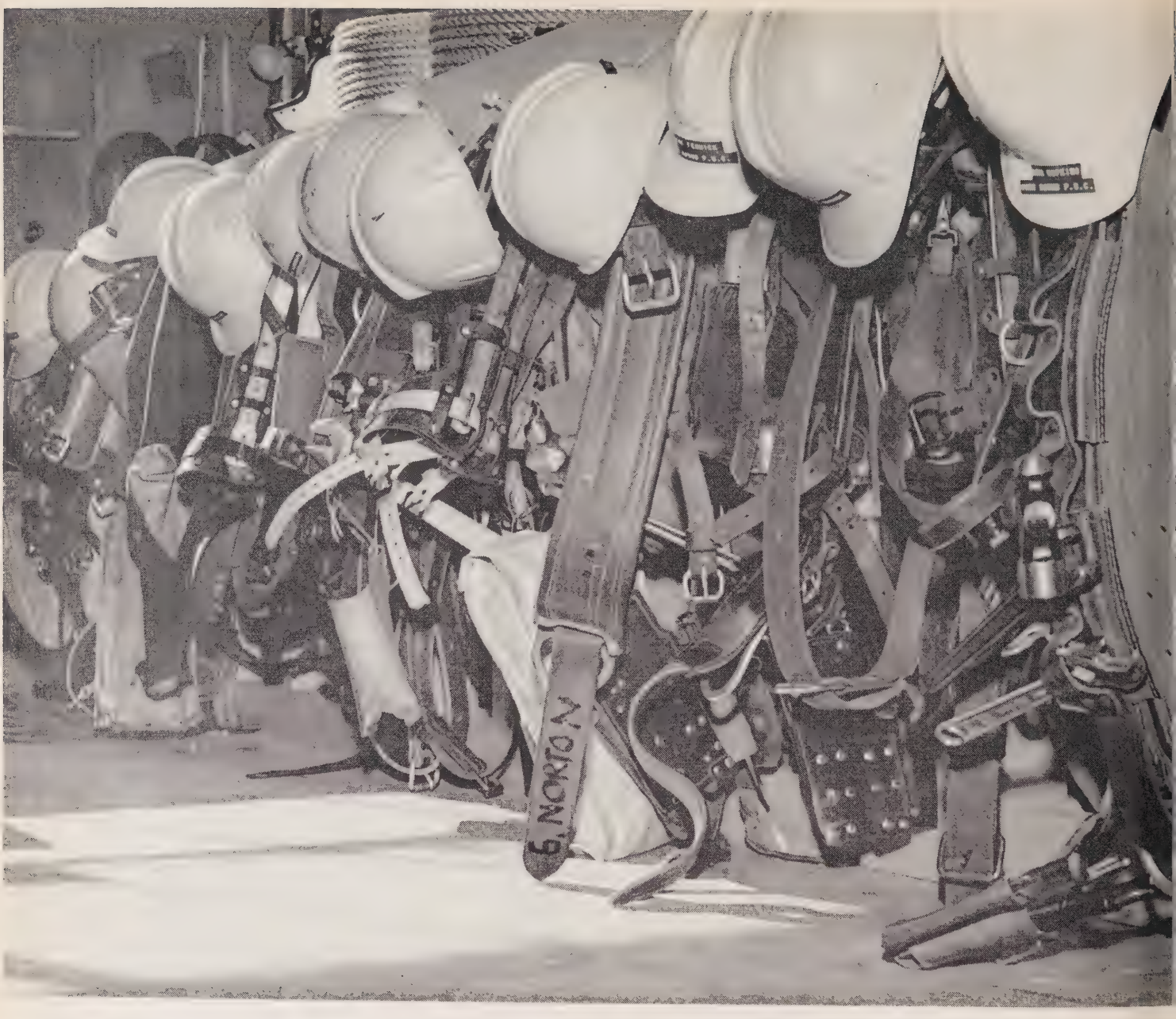
of England's great mysteries shrouds nehenge with its ancient stone pillars set ircular pattern on lonely Salisbury Plain. sses as to their meaning have ranged from ruid temple to an observatory.

But star-gazing couldn't have been farther from the minds of the "high priests" of the Electrical Utilities Safety Association when they arranged 11 poles in a circle behind their new training centre in Rexdale.

Spaced 15 feet apart, the poles are used to teach learner linemen reliance on safety belt and spurs when atop a utility pole. During the exercise, their hands are occupied by a basketball thrown from man to man, pole to pole.

In the last three years of EUSA's 51-year existence, the emphasis for some 625 trainees has been that a trained worker is a safe worker. In the belief that safety and job training go hand-in-hand, courses at the new headquarters stress the practical. Much of the training, particularly for linemen, is conducted in a large training area complete with linemen-learner poles and high-voltage lines.

Since this summer EUSA, sponsored by 247 municipal and private electric utilities, along with various municipal and private telephone and contracting firms, has consolidated its forces under one large roof in northwest




## ...and the high priests of safety preach the virtues of training

*Latest safety techniques are taught to linemen attending Electrical Utilities Safety Association courses at Rexdale. Instructor, opposite page, is Don Russell.*

Metropolitan Toronto. It was formerly operated from administration offices in the Workmen's Compensation headquarters in downtown Toronto and from training quarters in Oakville.

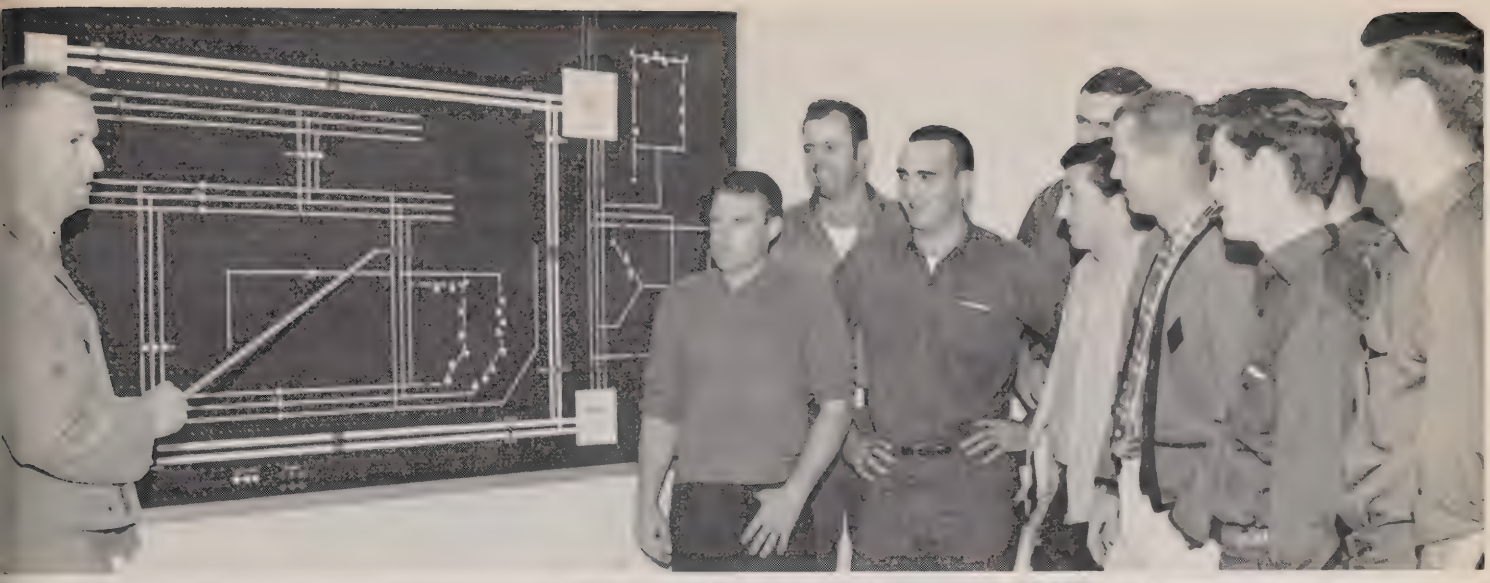
The new centre has classroom and working space for up to 45 trainees depending upon the type of course. Five individual courses are available to utility personnel and include everything from basic line work to orienting the overhead lineman to the complexities of underground distribution.

In the linemen-learner course, classes of 15 receive instruction in four stages — from a basic introduction to electricity and climbi techniques to more advanced methods of li maintenance.

"Training can be tailored to the requir ments of the individual utility," says Har Flack, EUSA manager.

With increasing stress on live-line maint nance by large and small utilities alike, EU has set up three separate five-day courses this field.

One course deals with protective equipme such as the rubber gloves used by linem repairing or maintaining high-voltage line Another demonstrates the use of live-li







ls, which allow linemen to work without errupting service.

Bare-hand, live-line technique makes up the d five-day session. This technique, used by tario Hydro crews for three years, is being opted by an increasing number of utilities. emen work bare-handed on the line from insulated aerial basket. Working in pairs, y are taught to put tension on the line, cut the defective part and splice—all without errupting the flow of power. At the end of se courses linemen often return to their ity accompanied by the EUSA instructors lo actual work in the field.

"Utilities serving fast-growing residential areas are finding an increasing amount of their work involves underground," says Mr. Flack. "This is the reason we have introduced a basic underground adaptation program for the overhead lineman."

This five-day course deals with such subterranean subjects as cables, switchgear and underground transformers; cable and circuit identification and the use of operating diagrams; gas detection and cable termination and splicing.

"Psychology of Supervision", a two-day training program for crew foremen, supervisors and superintendents, spells out the responsibility of management for accident prevention. The spotting of hazards, equipment inspection and field investigation of accidents is explained to those attending along with management procedure and personal communication.

EUSA's courses are enthusiastically supported by the Association of Municipal Electrical Utilities. Says Ron Mathieson, AMEU manager: "With changes in technique and all the new materials on the market these days, the need for up-dating work methods has become apparent to all utility personnel." □

# vineyards of niagara

by LES DOBSON



*"Good wine is a good familiar creature if it be well used"*—Othell

Shakespeare, of course, merely takes his place among generations of poets and writers who have expressed their appreciation of wine in varying fashion from educated sober assessments to downright intoxicated enthusiasm.

For wine is as old as history itself. Or almost so. There's evidence of fermentation along the banks of the Nile around 2400 BC while aging grape juice was titillating the palates of mandarins many centuries ago.

What is now France inherited the vine from the Phoenicians in comparatively recent times (600 BC, or so) and looking back a mere 300 years, the banks of the St. Lawrence echoed with whoops of Gallic delight as early French settlers seized on clusters of wild grapes and decided, after all, that the trip had been worthwhile.

Since then the Canadian wine industry has successfully weathered the withering drought of partial prohibition and overcome its association with the wino to become a prosperous and respectable enterprise. Last year Canadians consumed nearly eleven million gallons, most of it produced in Ontario.

Strangers to Canada are frequently surprised to learn that the vine grows here at all. Then they dig out tattered atlases and discover, amid pressed leaves and sketches of the classroom heartthrob, that the major grape-growing area of the Niagara Peninsula lies approximately along the same latitude as Southern France.

Twenty-two thousand acres of native grapes and European hybrids flourish in the shelter of the Niagara escarpment where there's an average of 173 frost-free days a year and a variety of soils. Ninety per cent of Canada's grape crop hails from this region, the mainder from the sunny Okanagan Valley British Columbia.

Growing grapes is big business. Hundr of transient workers drift in with the f breath of fall, ready for the picking seas From dawn till after dark trucks shuttle fr vineyard to winery and back again. Tons grapes come under the crushers every h at the height of the season.

September and October are months feverish activity, with everyone pitching in beat the grape-shrivelling hoariness of f frost.

Typical of the more successful "bana belt" farmers is the Staff family, who w nearly 500 acres on the escarpment above village of Jordan. It's essentially a fam affair, even though they operate as a limi





mpany. There's Howard Staff, his son velle and grandsons Howard, Brian and illiam.

At 72, Howard Staff still plays an active le although, as he admits, "I've been easing a little just lately." Known as "the Boss dy," Lavelle's wife, Lu, is responsible for ring all the temporary help, which may nount to 50 men and women in the picking ason. At the end of the season she signs em off with equal competence.

The Staffs have about 225 acres under apes and a further 120 acres still not bear-g. They've gathered nearly five tons from ery bearing acre this season.

"Last year was good for grapes," says velle, "but this one has been exceptional."

Mechanically speaking, the Niagara wine dustry is based on electric power. Crushers and presses are electrically driven, electric pumps maintain the flow to and from the vats, electric motors drive the endless belts of the bottling lines.

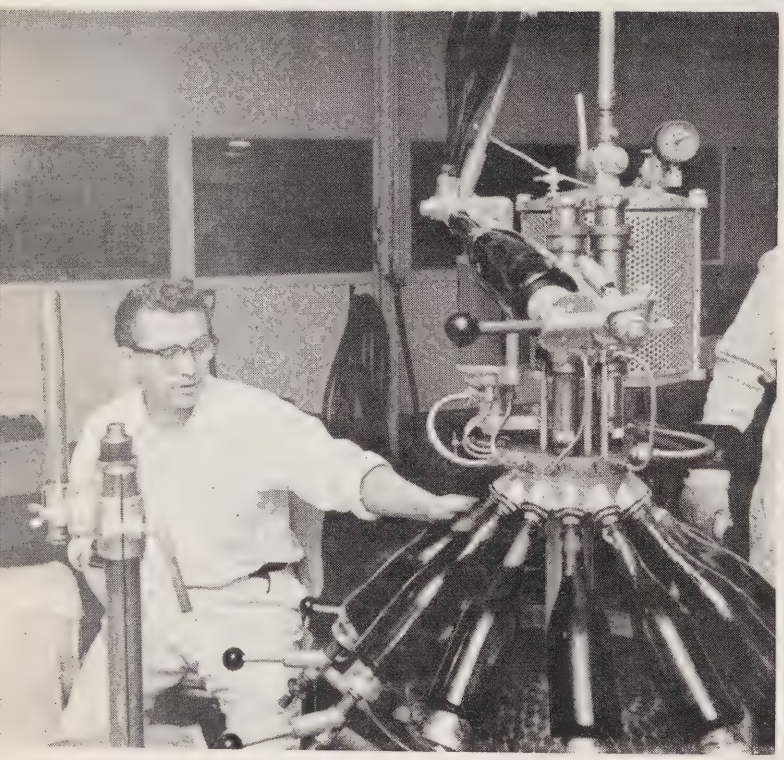
Giant refrigerators keep champagnes and certain wines chilled at the Niagara Falls winery of T. G. Bright and Company, largest wine producers in the country. Bright's huge champagne cellar is kept at a coolish 50 degrees and the 86,000 bottles there are agitated by hand every day for a month to help free sediment that is later removed.

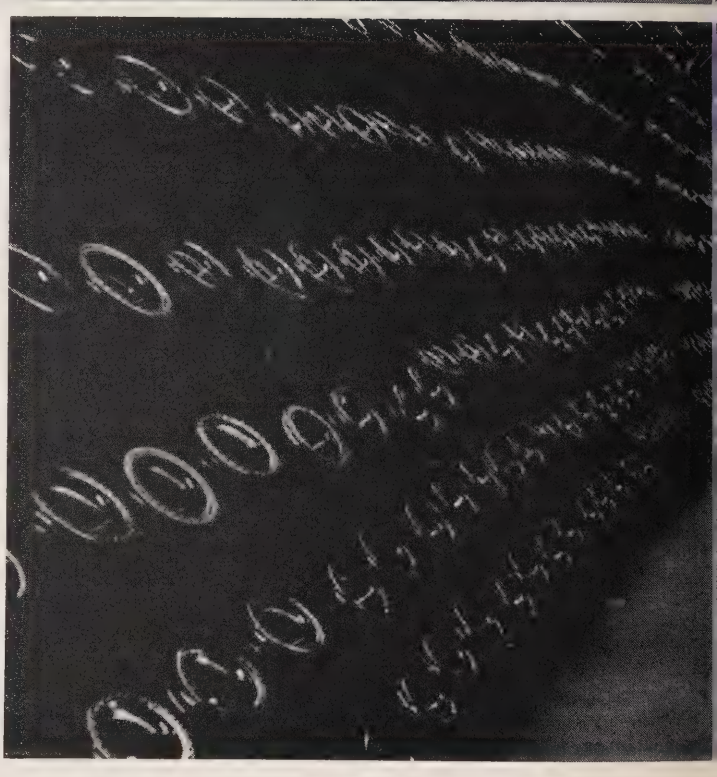
Here you can saunter past old oaken barrels and through labyrinthine cellars (not forgetting to slip the padlock into your pocket to avoid getting accidentally locked in). The largest vats tower 30 feet high and a rabbi passes patient nights in the white-walled scale-house as the year's kosher wines ferment.

*From the feverish activity of the short picking season to the supersensitive palate of the professional taster, the Canadian wine-making process is as stringent and professional as any in the world.*









Another efficient operation is conducted by Jordan Wines Limited at St. Catharines and Jordan. Jordan say their 325-ton presses are the biggest in the business and throughout the harvest feed them with nearly 50 tons of "must" an hour. Must is the vintners' name for crushed grapes. Nothing is wasted and the residue from the presses is returned to the farmers for use as fertilizer. Jordan wines produce more than 30 wines ranging from ports and sherries to table wines, crackling wines and champagne. Much of it is aged in their vast oak cellar set amid century-old vineyards at Jordan.

There are eight companies producing wine in Ontario and a further dozen or so spread across Canada. Only a few weeks ago a new company, Normandie Wines, a subsidiary of The Parkdale Wines Limited, of Toronto, was officially opened near Moncton, N.B. Normandie have been experimenting with blueberry wine and hope to use 50 tons of blueberries annually.

The New Brunswick winery intends to market a full selection of ports, sherries and table wines using grape concentrates imported from Europe — it will be the first Canadian winery to do this.

How do Canadian wines rate against those from the traditional vineyards of Europe?

Leading producers say that the dramatic increase in consumption demonstrates less prejudice by consumers. "Blind" taste tests, held for the public and the press, indicate that, more often than not, people can't tell the difference.

But Canadians do have a sweet tooth. "Our customers say they prefer a medium dry but what they usually want is a sweet wine," Bright's vice-president of marketing, Ge Mowers.

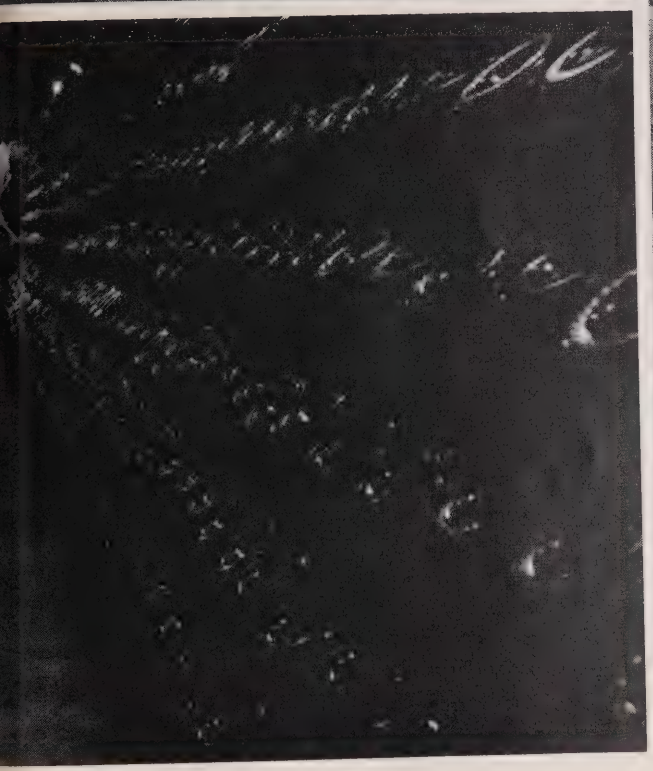
Canadian wine is remarkable for its cl Sediment is carefully removed and some panies pasteurize their wine.

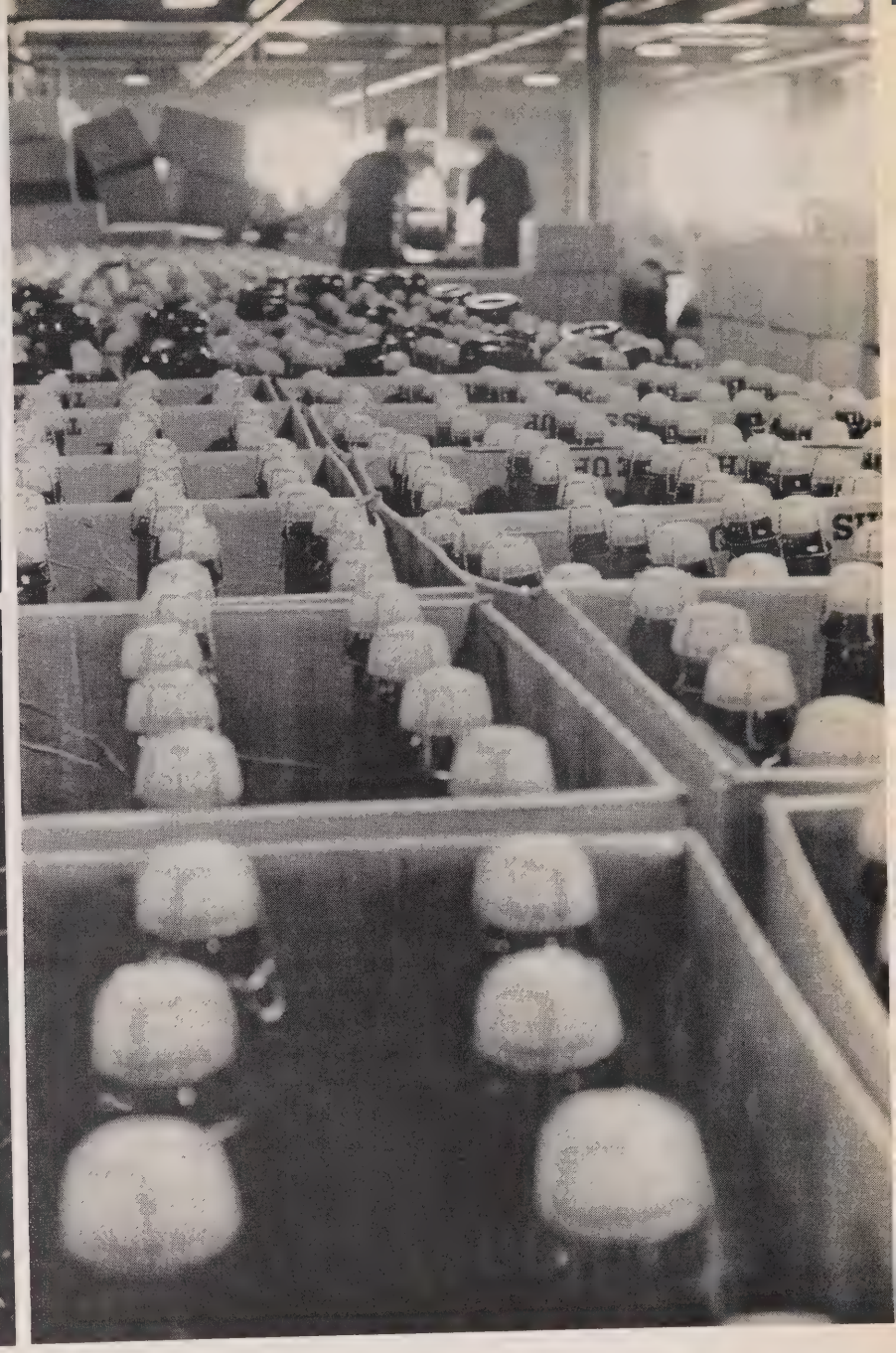
"Wine is the most beneficial and heal of all drinks," said Louis Pasteur and the people, who are quick to quote him, equally quick to point out that his pasteu tion process was originated for wine, not

The type of wine produced depends or grape, some of the best-known native vari being the Concord, the Agawam, the Dela and the Dutchess. French hybrids r through exotic names like the Pinot Noir Chardonnay to such nomenclatures as S 10878 or 9110.

Wineries introducing new varieties ge







lly work about 10 years ahead. Experimental ines are planted as two-year-old seedlings and roduce wine-bearing grapes within five years. f the result is encouraging, a whole crop is lanted to produce wine for the commercial narket in a further five years' time.

The quality of many Canadian wines is kept onsistent by blending them with similar wines f different vintage. This avoids any variation n quality from year to year. Fermentation, vhich would take place naturally through the atalytic action of enzymes from minute yeast rganisms in the air, is ensured by the addition f cultivated yeast.

Much of the spade work involved in producing new grape varieties originates at the Ontario Government experimental station at Vineland, where vines from across the world re employed to produce hybrids suited to local soil and climate. Wines are made in small quantities at the Vineland laboratories and the vines kept under close scrutiny for at least four years before being accepted by the industry.

Consumption of table wine has risen enormously in Canada in recent years, accounting for more than 15 per cent of production. Some put this down to the wine-and-dine habits of an increasing influx of European immigrants and to the greater number of Canadians now taking their vacations in Europe. Others say they cannot find a cause.

But, whatever the reasons, no one seems to doubt that the Ontario wine industry, aided by more than a century of know-how, ideal climate, streamlined production and low-cost electric power, has little to fear from the rest of the wine-making world. □

*Crushing machinery, bottling lines, vats that must be emptied and filled . . . electric power provides the motive force for Ontario's booming wine industry. The bottles standing bottoms-up? That's the way they ferment champagne.*

# reports from the North Pole suggest that several elves have been working full time just to keep up with what's new in electric appliances

# santa goes electric

When grandma was dragging her min and her swinging boyfriend curb cruised electric car, choosing gifts at Christma was a real bind. She probably settled on handkerchiefs and he retaliated with a s of lavender.

Electricity was strictly for lights and were turned out for reasons of econom course, after the rest of the family had re Only the "in crowd" considered electri pliances at the turn of the century and choice was confined to a toaster, an iron coffee maker.

But times have changed and this y shoppers have been able to choose from than 100 electrical devices ranging fron electric dog blanket to infra-red ovens anteed to get the turkey on the table be guests have had a chance to deplete the cellar.

Retailers report that appliances will in account for many of the bulges in Santa's this year — a situation for which manu turers can take a bow. Their ingenuity in proving the old and introducing the ne reaching new heights and while some of t brain children may seem frivolous, they p ably reflect our affluent society and they help meet the problem of the man who everything.

Even the practical man who plumps f major appliance, knowing full well his will prefer a refrigerator or a cooking ra to diamonds or mink, finds himself i quandary in assessing the virtues of the la models. He'll find there have been char since the iceman used to cometh.

Sweeping under the fridge, as any husb knows who has wielded a broom while wife held the appliance clear of the floo an exhausting procedure. It's been overc by one manufacturer with the use of a lif pad which operates by air from an ordin vacuum cleaner. Hoisted on its air cush the refrigerator can then be moved about v the greatest of ease by the man of the ho freeing his spouse for snow-shovelling mounting the snow tires.

Another food-keeping innovation is a frigerator-freezer with work space inc porated. Located on the upper portion, refrigerator has two, swing-out doors for e access. The freezer, with a self-filling ice-c tray, pulls out from under the waist-h counter top.

De-icing of both freezing and cooling c partments is another time-consuming t

ed to the past in many models. Some automatic ice-cube makers which ate trays and are guaranteed to keep up the merry-making even in the holiday . They shut off when the storage chest is

d along with improved performance, appliances are becoming more glamor- olorwise. One refrigerator manufacturer ering interchangeable panels for doors, ing the owner to have colors or simulated panelling installed at will on a do-it- elf basis. White is losing out to all the s of the rainbow.

king and the Christmas season go hand- nd but even the best cooks hate to clean ven. Aware of the situation, one manu- rer has turned this disagreeable chore to electricity. By raising the oven tempera- to 880 degrees, it is claimed, food stains lly vanish. Extra elements around the and bottom of the oven provide the addi- l heat. The oven shuts off automatically e end of a two-and-a-half hour cleaning .

emovable or side-opening doors are other es the electric range makers are using to itate cleaning.

nd now there are high-oven cabinet ranges glass doors, sometimes referred to as eye- consol units. These take the stooping out nooping into the meal's progress. Pull-out ace cooking elements are located below the .

ven more significant in an age where a ute saved in the kitchen is a minute earned e TV set, is the electronic oven. This space- contribution to the culinary art cooks up )-pound roast in 30 minutes, a five-pound ken in 12 minutes and will crank out a but steak in 70 seconds. Microwaves heat the food while the oven remains cool.

Extensively used in the food service in- try, electronic cooking is making a bid for home market but prices are a deterrent his stage of development. If mother wants save kitchen time in order to watch TV — nces are she'll have to settle for black and te. Color and instant cooking are a bit for most family budgets.

Capacious though it is, Santa's sleigh will y hold so many refrigerators and electronic ges. The bulk of his load will be made up compact, portable electric appliances. Here, iety and ingenuity really come into their n.

For a start, there's a portable electric clothes dryer being introduced which handles up to two pounds of wash and is designed specifically for the student and apartment dweller.

Car buffs, who can usually overlook dirt anywhere but in the Anteater Eight parked in the driveway, will welcome a new, diminutive vacuum cleaner which plugs into the cigaret lighter outlet. No bigger than a ladies' handbag (which, we'll admit, doesn't necessarily make it very small), the cleaner comes complete with adjustable wands and an adapter for use in regular electrical outlets.

Teflon and other non-stick materials have been united with electrical cooking appliances so that electric frypans, saucepans and buffet grills can now be used without grease and with a minimum of cleaning required. This year, irons are available with Teflon on the pressing surface to prevent sticking on starched items.

Blenders have also been introduced with new shapes, increased capacities and automatic speed settings available on most models. One blender not only slices, dices, stirs and pulverizes, but cooks as well. Another enterprising manufacturer has developed a multi-purpose electrical aid which, it is claimed, will grind meat, crush ice, make salads, open cans and sharpen knives.

And the tie that binds has been severed, in many instances, with the growing acceptance of cordless devices. Pooh-poohed only a few years ago as oddities, the electric toothbrush and carving knife are almost standard household items.

But the parade has just started. A small, cordless paring knife has since been introduced and in the United States you can even purchase cordless electric window-washers, mixing spoons and, of all things, electric spaghetti forks.

The power behind most of these devices is provided by re-chargeable nickel-cadmium batteries. You simply plug the appliance into the regular electrical outlet and in a few hours it's ready to go again.

And if Canadian ladies aren't among the best groomed in the world they can't blame the electrical industry. Hair dryers and manicure sets are more compact, speedier and efficient than ever. One portable electric dryer provides a beautifying mist which can clean hair between sets and even touch up tint jobs.

Remember those curling irons and electric combs that were popular away back when? Well, they're back with a new look as streamlined and colorful as the swinging sixties. Metal rollers are available as curling iron accessories to dry the hair.

Nor have the men been neglected. There is, of course, the ever-growing list of electric tools capable of drilling, sawing, planing, sanding and mortising wood, plastic, metal and careless thumbs. For the rare individual, who derives no sense of satisfaction from wielding a shovel, there are electric snow throwers of several makes and models. One, with a two horsepower motor, can dispose of 250 shovelsful a minute — about the equivalent of some men's winter output.

Electric fishing reels are also available, eliminating the back-breaking task of retrieving the lure once it has been cast upon the waters.

So much for the present. What's in store for December 25, 2000 A.D.? All we can do is suggest a general picture of the way our homes will be run in the future.

It's predicted that today's business machines, refined and much more compact, will be commonplace in the home. Computers will be programmed to prepare an entire meal. It will be selected from the freezer and transferred to the oven by a conveyor belt. For an encore, the computer will tell the lady of the house whether or not she's programming nutritionally-balanced meals. It will also program the laundry system which will automatically wash and dry the clothes before sorting, ironing and storing them.

Thermoelectricity will do away with the compressor, evaporator and condenser sported by today's refrigerators so that individual cooling and freezing cabinets may be located wherever is most convenient. Each will have its own bank of thermoelectric modules to provide the right temperature and humidity control.

High-frequency sound waves will look after the dishwashing and electrostatic wands will do the dusting. Color television will still be with us but they'll add another dimension for authenticity.

Coming back to earth, what can we suggest for the last minute shopper with friends who have everything? Try these on for size: "his" and "hers" computers; electric hair dryer for dogs; elevators for the home; or an all-electric weight-reducing belt. Finally, for secret agents and others of a secretive bent, there is the electronic wastepaper basket. Selling for $99 in the United States, this little number is guaranteed to shred paper into unreadable waste at the drop of a memo. □



# at's what itchy-fingered Canadians tote up each year

e top floor of a boarding house in Exeter , Boston, Massachusetts, a young man s intently. Suddenly his expression ges as a voice comes from the instrument ear.

Ir. Watson, come here. I want you!"

atson puts down the crude telephone, es from the bedroom and down the hall bursts into another room, converted into oratory.

Ir. Bell," he cries to the tall dark-haired working there, "I heard every word you distinctly!"

x months later, Alexander Graham Bell on holiday at his parents' home at Tutelo ghts, near Brantford, Ontario, when he uaded the Dominion Telegraph Company et him use their line between Brantford Paris.

ell, then 29, drove the eight miles to Paris iorse and buggy and installed his clumsy iver in a boot and shoe store, which also ed as the telegraph agency. Spectators ked the tiny store that sultry evening and more milled outside as the singing of Bell's family came over the line and his father recited Hamlet's soliloquy. It was the first long-distance telephone call.

Such was the birth of the telephone nearly a century ago. And since Canada figured so prominently in its development, it seems only fitting that Canadians today should reach for the phone more frequently than anyone else.

Somehow or other, we manage to tot up eleven billion telephone conversations every year, an average of nearly 600 calls a person. With more than seven and a half million phones, we rank fourth in the world in telephone development.

Canada is served by eight large telephone systems and thousands of smaller ones. The privately-owned Bell Telephone Company of Canada operates throughout the greater part of Ontario and Quebec as well as parts of Labrador and Northwest Territories. Large private companies serve British Columbia and the Maritimes while three provincially-owned systems serve the prairie provinces.

At one time, Ontario Hydro operated its own independent network. With the exception of a few emergency circuits, however, the bulk of its extensive telephone service is now leased from the commercial telephone companies.

Today the telephone business is one of the most automated there is. Indeed, were it not for automation, the telephone companies could never find sufficient operators to meet their needs.

Most telephones in Canada are dial-operated and the steady introduction of direct distance dialling means that many customers can juggle the digits to reach any one of 100 million phones in North America. Eventually this service will be extended to handle overseas calls.

Telephone talk, though, isn't just confined to people. Computers are being hooked into the telephone network in increasing numbers to indulge in hours of binary backchat, one with another. Speeds of 50,000 words a minute are now commonplace.

Daily newspapers get much of their information over private lines leased from the telephone companies. Stories of heartbreak and joy, parliamentary wrangles and war, are reduced to electrical impulses punching holes in distant tape that feeds ranks of clattering type-setting machines. Photographs, sketches, maps and written material pour off the wires, too.

Even the lines themselves are no longer sacrosanct. Aside from carrying trunk calls, the now familiar dish-shaped reflectors that spell microwave unerringly beam radio and television programs across the continent.

On the horizon is yet another mind-boggling channel of communication that crops up time and again in contemporary scientific writing — the laser. Its potential is nothing short of fantastic. While a cross-country microwave system can carry up to 16,800 voices, a single laser beam has the theoretical capacity to handle all the telephone, data and TV traffic in the world.

Needless to say, the telephone companies are displaying almost fanatical interest in this latest phenomenon. Bell scientists, in fact, were responsible for the first continuous laser beam only six years ago.

International communications will probably receive a terrific boost from satellites now under development, successors to Telstar that will pick up radio signals carrying two-way conversations, data or TV programs, amplify them and send them to receiving stations thousands of miles away.

What powers our telephonic labyrinth? Well, the network is operated by direct current from rows of 48-volt storage batteries located at the various exchanges. These batteries are kept continually charged through rectifiers from the normal AC Hydro supply.

In the event of a power interruption, the

eleven billion phone calls

batteries will maintain communications for several hours. Even so, larger telephone offices have emergency gasoline or diesel generators.

Hydro itself rents telephone circuits and equipment to form a private network linking more than 5,000 phones at its Head Office, each regional office and at many area offices and major power stations. This network is used for routine administrative calls. In addition, an operating telephone network connects the system control centre at Richview, in North Toronto, with each regional control point and every main generating and transformer station in Hydro's East System, which covers a large part of the province.

Special equipment enables Hydro's engineers and operating staff to talk over the power lines themselves, an invaluable standby in case of damage to the commercial network or internal dispute in the telephone industry.

Hydro also uses its own VHF and microwave links, leased circuits and power lines to telemeter information and control remote power stations, particularly hydro-electric installations in the north. In addition, Hydro's communications network is backed up by more than 1,000 fixed and mobile radio units. This network is used extensively for the dispatching and control of repair and construction crews. The billing of more than half a million retail customers and the pay cheques of more than 14,000 employees are among the matters handled by computer, operating over leased tele-type circuits.

The telephone has come far since that Brantford-to-Paris call in August, 1876. But would Alexander Graham Bell have been astounded by the way his invention has progressed? The answer is probably no, for Bell was a man of extraordinary vision.

Although the telephone brought him fame, he also developed a system of air-conditioning, invented an electrical probe for surgeons, invented the wax-disc record, experimented with X-rays, was co-inventor of the aileron and developed two new breeds of sheep to name but a few of his accomplishments.

But the telephone is for what he is chiefly remembered and, perhaps, the ultimate mark of its success in Canada is the way it is taken for granted.

Even in a highly-urbanized nation like Britain, the question is usually "Are you on the phone?" Life here would be inconceivable without it. □





*Telephony has come a long way since Alexander Graham Bell ruminated over the basic principles at his parents' Brantford home, top right. Also shown: a videophone, microwave equipment providing communications with Ontario Hydro's Mountain Chute hydro-electric project, storage batteries powering a large telephone exchange and part of Hydro's own telephone exchange in Toronto.*







# pr in the spotlight

Greater unity and more effective public relations were recurring themes at the District 7 OMEA annual meeting at Woodstock.

In an inspiring address, W. E. Gunn, of the H. J. Heinz Company, Leamington, said it was imperative in modern society that every business or institution have an effective public relations program.

"The impression your organization leaves with people is real," he said. "The image of your business is not a fantasy, it is a cold, hard fact."

Mr. Gunn said that an organization with a good reputation would attract the best employees who, in turn, would enhance the company's reputation.

"Once you start getting the best available talent, the whole thing snowballs. Reputation attracts talent. Talent improves that reputation and attracts even better talents and all the time you accrue the benefits," he said.

Employee behavior was important to an organization's image. The way servicemen drove and cared for their vehicles or the way workers treated private property while laying new cable were typical examples.

Employees also influenced public opinion through their actions as citizens. "Emp are frequently treated as representatives company for which they work. Behavic neighbor or citizen is quite often assc with some such description as 'He wor the PUC'," said Mr. Gunn.

Dr. J. E. Wilson, OMEA president, told missioners that sales promotion requi united effort on their part. The use of a increasing number of kilowatt-hours was tial if the cost of power was to be kep reasonable level.

"Hydro needs salesmen today. It them in every municipality in the provinc these salesmen should include every m of the OMEA," he said.

Earlier, the retiring district president, Pearson, of Strathroy, had urged his auc to remain united to meet the challenges future.

"During the two years I have been dent, we have had 100 per cent membersl this district. If the OMEA is to speak w strong voice we must have the backing our utilities," he said.

"These are changing times and we mu prepared to change with them. We shoul cide what changes we are going to make selves before someone forces them upon Mr. Pearson added.

AMEU president E. F. Burbank told gates that considerable savings woulc achieved through an agreement with the Telephone Company for the joint buri power and communications cables. Sa were also expected from efforts to standa voltages across the country.

Mr. Burbank also mentioned training p lems, saying that the AMEU was already op ing schools for metermen, managers accountants while, in co-operation with Electrical Utilities Safety Association, it looking after linemen on training or refre courses. He said agreement had recently reached to establish a central training prog for all the utilities in Ontario.

"With the coming of new techniques, materials and new demands, studies are tinually under way to keep ahead of tod world. But the world is moving very quick he added.

Ontario Hydro Chairman George E. Gat cole said that Southwestern Ontario was periencing an unprecedented industrial b with projects totalling nearly $300 mil being announced in the last 15 months. Tl were expected to create nearly 7,000 jobs.

Power demands reflected this expansion in the last 10 years the load in the Southv had risen 121 per cent.

A resolution from Strathroy PUC conten that deviations were appearing in applicati of the Hydro symbol, and urged that OMEA committee be established, with rep sentation from the AMEU and Ontario Hyc to study further the use and application of symbol.

**"The image of your business is not a fantasy, it is a cold hard fact" — District 7 OMEA**



*New District 7 OMEA officers, from left, seated: Elmo Curtis, 2nd vice-president, London; L. W. Smith, Tillsonburg, president; R. G. Campbell, 1st vice-president, Embro. Standing: W. C. Pearson, past president, Strathroy; H. R. Henderson, hon. vice-president, Woodstock; W. R. Gifford, Aylmer; Robert Austin, Arkona; P. R. Locke, hon. vice-president, St. Thomas; Ross Fewster, Ingersoll; Stanley Webster, secretary-treasurer, Tillsonburg.*



*George Gathercole chats with host Woodstock commissioners at District 7 meeting. From left, Mr. Gathercole, James Carnwath, F. T. Julian, H. R. Henderson, and Mrs. B. Smith, acting mayor.*

# booming power demands

## Hydro Chairman outlines expansion problems to District 8 OMEA meeting

Because of unprecedented demands for power in both Canada and the United States, manufacturers of electrical equipment are having difficulty meeting delivery dates, Ontario Hydro Chairman George E. Gathercole told OMEA District 8 delegates at the annual meeting in Harrow.

Mr. Gathercole said that manufacturers were deluged with orders and Ontario Hydro was not alone among electrical utilities in being slightly behind with the commissioning of new units.

Another reason for commissioning delays was that much of the equipment was of new design.

"A certain amount of pioneering is essential if we are to provide power at the lowest possible cost," the Hydro Chairman told nearly 100 representatives of more than 30 municipally-owned utilities attending the meeting.

Mr. Gathercole said that expanding power demands reflected industrial growth in many areas, and that Southwestern Ontario was no exception. Here there was full employment and a complete transformation from the slowdown of a few years ago.

Mentioning factors affecting operating costs, the Hydro chairman said that employees had to be paid competitive wages and salaries and there was also the problem or rising interest rates. A difference of two per cent in interest charges would amount to $20 million in a billion-dollar construction program such as the one in which Hydro is involved.

Outlining the role of the local commission in collective bargaining, E. G. Reynolds, manager of the Municipal Electrical Utilities Labour Relations Service, said that utilities must close their ranks to meet sophisticated union techniques.

"The fellow across the table has been quick to spot our weaknesses and exploit them. When a utility did not know what other utilities were doing, and did not look locally for comparisons of wages and benefits, it has come out badly."

Mr. Reynolds added, "The only economically sound and equitable principle is that the utility should pay its employees at the same competitive rates which prevail in the labor markets in which the utility operates. They should be at a level which will continue to attract and hold the present highly-skilled and efficient workmen required in our industry. It would be to the utility's benefit not to be the leader in the community, but to be among the leaders by maintaining wages and benefits within the top quartile of those paid by industry in the area."

Summing up, Mr. Reynolds said the commissioners would be most effective in collective bargaining by establishing a sound wage philosophy and sticking to it, by backing their negotiating team to the limit and by insisting on up-to-date statistics on wages, benefits and working conditions before setting bargaining framework and approving settlements.

Hints on how the municipalities could achieve improved communications with the public were given by James A. Blay, Ontario Hydro's director of public relations.

Mr. Blay stressed the importance of managers keeping their employees informed. "We must keep employees acquainted with what is taking place because they are our best PR outlets," he said.

Other ways of improving customer relations included the preparation of financial statements on the utility's affairs and the publication and distribution of a newsletter.

"But the important thing is to seek opportunities," he said. "Talk to as many customers as you can — to service clubs, schools, church groups and women's organizations — to acquaint them with your operation. In this way, many more people will have a better understanding of Hydro throughout the province."

Mr. Blay outlined plans to improve the OMEA public relations effort and promised that Ontario Hydro would lend its support at both Head Office and regional level.

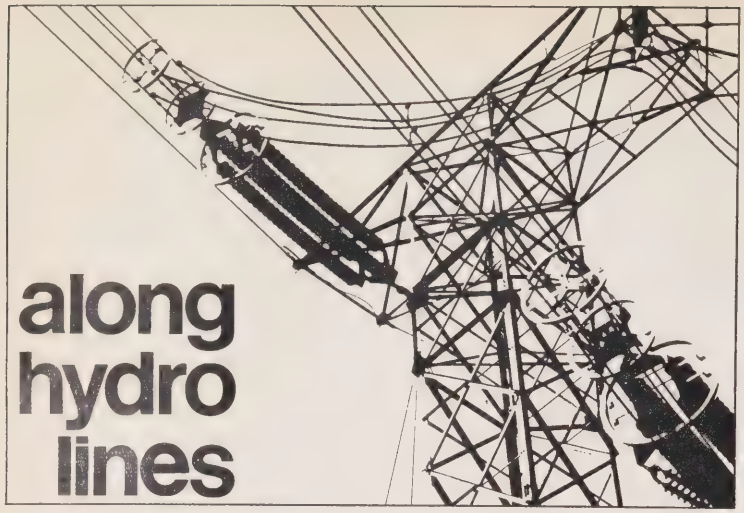
"Local utilities do not tell their story often or strongly enough to the customers they serve," he added. □



*District 8 OMEA elected these officers, left to right, seated: Edward Cecile, 2nd vice-president, Windsor; Roy Warwick, president, Blenheim; J. T. Barnes, 1st vice-president, Sarnia. Standing: T. R. Gawley, secretary-treasurer, Blenheim; Guy Morrison, Chatham; M. J. Brian, past-president, Windsor; L. F. Ounsworth, Harrow; and OMEA President Dr. J. E. Wilson, Barrie, hon. vice-president.*



*These Harrow Hydro commissioners were hosts to the District 8 meeting. Left to right are: L. F. Ounsworth, Mayor Ty Ryan and Jack Cunningham.*



# along hydro lines

## Thirty years on commission



For 30 years Thomas Barnes has taken Niagara Falls Hydro to heart, even when it came to vacations. Whenever he travelled in Europe, the British Isles, or North America, the present chairman of Niagara Falls Hydro took a busman's holiday, visiting power installations and studying electrical utility methods.

But Mr. Barnes decided not to run for re-election. This is the first time in almost 30 years his name will not appear on the ballots.

First elected to the Niagara Falls commission in 1937, he has been continuously successful at the polls with the exception of 1940. Mr. Barnes was president of the OMEA's District 5 in 1954-1955 and as his many friends in the electrical industry can attest, he has been a faithful attendant and contributor to important OMEA meetings both at the district and parent association level. He is the founder of Barnes Electric Limited, a Niagara Falls firm where he now serves as a consultant.

"It's been a pleasure to have been on the commission all these years," said Mr. Barnes, announcing his retirement. "I've learned a lot and hope I've contributed something. However, I feel it's time a new man came on the utility board."

Niagara Falls Mayor Robert Keighan, when he learned of Mr. Barnes' intentions, declared: "I would like to publicly commend you for the years you have spent on the Hydro commission, for the many hard hours you have worked in bringing the commission to this point. You have always impressed me as one of the most honest persons I have known and this is a desirable quality for anyone in elected office. I appreciate, and I'm sure the citizens of this city appreciate, the very fine job you have done." □

## 'News' veteran retires



William Rattray, first editor of Hydro News and well known in municipal Hydro circles throughout the province, has retired after 24 years' service with Ontario Hydro.

Mr. Rattray was born in Scotland, and emigrated to Canada as a young man. He became a reporter for the old Toronto Globe and later its day editor and Queen's Park correspondent.

After several years with an advertising agency, he joined Hydro in 1942 as executive assistant in the secretary's office. Two months later he was asked to produce a popular type of magazine to replace the more technical Bulletin, in existence since 1915. The result was Hydro News.

About the same time, Mr. Rattray also established the Hydro News Bureau, a news service which ultimately became the Editorial Services section of Hydro's public relations operation. He was also first editor of the now defunct Staff News and subsequently held various administrativ tions, one of the most important being liaison officer to the late ch Robert H. Saunders. In recent years he organized a photo feature s and photo library, for which he was responsible until his retirement.

## Blackout action

Steps taken as a result of the major power interruption on Noven 1965, were outlined by top Ontario Hydro officials at a Toronto conference last month. Newsmen learned that Hydro had installed f relays in the provincial power network, modified existing relay altered the settings.

Hydro has also installed improved recording, monitoring and dat ging equipment and placed combustion-turbine generators at its th power stations to assist with "black" starts — large thermal-el generators need power to get them moving.

Control systems have been refined and the entire provincial ne analysed by computer to determine its stability and the limitatio posed by protective devices. So far, these steps have cost Ontario at least $250,000.

Hydro Chairman George E. Gathercole told the newsmen that Hydr co-operated fully with the U.S. Federal Power Commission and late the Northeast Power Co-ordinating Council. "The possibility of a rence is so remote as to be inconceivable," he said.

## Fuel for discussion

Nuclear experts from Canada, Britain and the U.S. will consider th cessing, reprocessing and management of uranium fuel at a confe at the King Edward Hotel, Toronto, next February. Sponsors are the Ni Finger Lakes section of the American Nuclear Society and the uranium mittee of the Canadian Nuclear Association.

The conference committee chairman is R. L. Cohen, of Canadian G Electric, and delegates will hear speakers from Eldorado Mining ar fining, CGE, the Nuclear Materials and Equipment Corp. of Pennsyl and the United Kingdom Atomic Energy Authority. Other organizations represented include Ontario Hydro, Canadian Westinghouse, Atomic E of Canada, Western Electric, Denison Mines, Rio Algom Mines and g ment departments and universities from both sides of the border.

## Niagara becomes a trickle

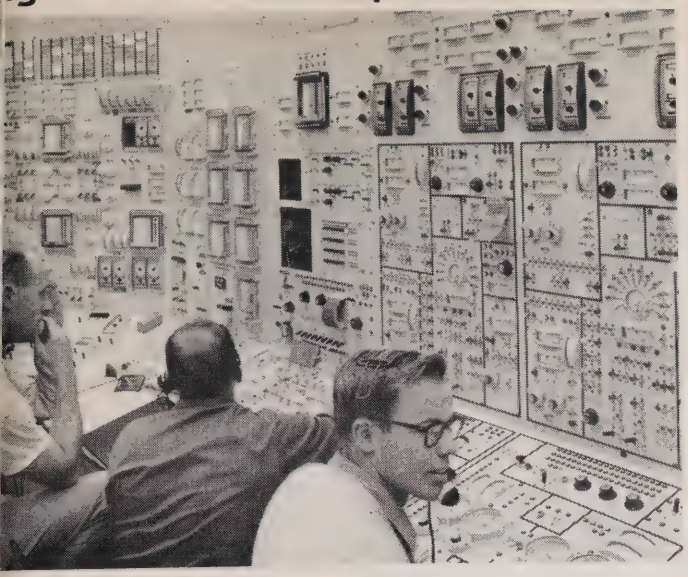
Water plunging over the American Falls was reduced to a quarter normal flow last month as men of the U.S. Army Corps of Engineers t off the Niagara River "tap". Purpose of the cutback was to permit graphs and aerial surveys of the falls in an effort to find ways of h erosion.

Much of the diverted water was sent hurtling over the larger Hors Falls, on the Canadian side of the river, by raising all but three gates in the upstream international control dam. The inspection about six hours. Workmen from the Niagara Frontier State Park mission took advantage of the low water to remove debris from the above the falls.



*They're still impressive at only a quarter.*

## ıglas Point starts up



*push that second valve down . . .*

eers started up the nuclear reactor at the $85 million Douglas Point r station last month and immediately began an intricate series of steps ıg to the generation of electric power. Essentially, these were directed rds raising the heat output of the reactor to generate steam and drive tation's turbine. First power is expected by the end of the year.

uated midway between Kincardine and Port Elgin on the eastern shore ıke Huron, Douglas Point is Canada's first full-scale nuclear power ın. Its single generator has a capacity of 200,000 kilowatts, enough ıply a city the size of Sarnia.

ɔmic Energy of Canada Limited built Douglas Point in co-operation Ontario Hydro, which is operating the station. Power produced there ɔe sold to Hydro until the plant proves itself suitable for routine ıtion, when Hydro will buy the station outright.

uglas Point has a CANDU (Canadian Deuterium Uranium) reactor using ral uranium for fuel and heavy water as a moderator and to carry heat reactor to boiler. The system has been developed by AECL and is based search work at the Chalk River laboratories, near Pembroke.

staff of 92 will operate the station, construction of which began in . Up to 500 men were employed at the site and more than 600 Canadian ıfacturing companies have been involved. □

## ıunicipal briefs

**Etobicoke Hydro** has successfully appealed to the Ontario Municipal Board concerning the division of costs in relocating Hydro plant necessitated by a major highway widening project in the Township. The O.M.B. ruling provided that the Depart- t of Highways pay 100 per cent of the cost of all temporary lines in ıection with this project and 50 per cent of labor and materials of permanent underground installations. The department had initially ɐd to pay $13,500 or 27 per cent of the total cost. Instead, it will approximately $29,500 or 60 per cent of the cost.

ɔr many years it has been the policy of the Department of Highways ɔay 50 per cent of the labor costs involved in relocating hydro plant to highway widening. Etobicoke Hydro feels that the O.M.B. ruling sets ecedent which will not only benefit Etobicoke in the future but most ɔo commissions throughout the province.

**ɛrborough Utilities Commission** received nearly 180 entries in a com- tion for CGE employees that was designed to stimulate interest in tric heating. Contestants had to guess the annual power costs of an lectric home. First prize of a radio went to a CGE pensioner.

**cked unconscious** in an electrical accident recently, superintendent d Kellestine of Kincardine PUC was revived by line crew members were prompt to apply artificial respiration. Mr. Kellestine received trical burns and a newspaper report states that severe muscle spasms caused by the shock crushed vertebrae in the mid-spine area.

**Acton Hydro** may get a king-sized gift this Christmas — a new building. Reconstruction of the old premises is expected to be completed by December 25.

**Widdifield Hydro** secretary-treasurer Dave Stewart bagged a 350-pound buck in the first few hours of the deer hunting season. Dave and his son, Erik, shot the big animal at Chudleigh, northwest of North Bay.

**Vaughan Township** has been told it can buy the local Ontario Hydro distribution system for about $2,600,000. The township is at present supplied as part of Hydro's Woodbridge area.

**Mildmay Hydro superintendent** R. J. Kramer has joined the exclusive Turtle Club. Mr. Kramer recently received his membership card from Jack Craig, field safety supervisor of the Electrical Utilities Safety Association, for wearing his hard hat on the job, thus escaping injury when struck on the head by a falling chain saw.

**Toronto Hydro customer,** Canada Iron Foundries Limited, is combatting air pollution by installing five electrical induction furnaces to replace its coke-burning blast furnaces. To be in operation next year, the new furnaces will cost $1,500,000.

**Two former members** of the now defunct Electric Service League of Ontario have been appointed to Ontario Hydro's staff. William Scully is now residential sales supervisor in Central Region and Carl Simms becomes area sales representative for Richmond Hill area. ESLO recently merged with the Electric Heating Association of Ontario to form the Ontario Electrical League.

**Sarnia Hydro** held a one-week exhibition of Indian relics and valuables at its Lochiel Street offices. The relics, from a cache believed to have been secreted by a tribe of Chippewa Indians during the U.S. Civil War, were loaned to Hydro commissioner John T. Barnes from a museum in Grand Rapids, Michigan. Mr. Barnes has been championing an Indian museum for the Sarnia area. He is an honorary chief of the Chippewas.

**Utilities are busy** preparing for next year's National Electrical Week, the theme of which will be "Electricity Powers Progress". Canada's National Electrical Day will be held in Montreal on February 6.

**Toronto Township Hydro** has appointed Minoo E. Treasurywala to the newly-created post of customer relations director. Mr. Treasurywala has had extensive business and marketing experience in his native India and also in Britain and Canada. □

## 'Circus' hits the road



*Electricity made the sawdust fly in 1912.*

Sir Adam Beck's travelling "circus" is back on the road after more than 50 years. But far from showing Ontario farmers how electricity can help milk the cows or cut wood — the mobile display is pictured in action around 1912 — one of the vehicles in the "circus" is this time bound for Montreal and the Ontario Pavilion at Expo '67.

On loan from Ontario Hydro, the vehicle has occupied part of the Antique Car Museum at Niagara Falls for the last few years. It is now resting temporarily in Toronto for a small amount of restoration work, including the fitting of 1912 licence plates, before moving on to Quebec.

Sir Adam, Ontario Hydro's first chairman, frequently travelled with the

vehicle, which carried various types of appliances and other electrical apparatus. A typical demonstration would include milking a cow with an electric machine and then handing onlookers some of the cream with coffee brewed on the truck's electric stove. □

## The flow of history

Latest figures show that about 70 of Ontario's 358 municipal electrical utilities in the Hydro "family" have submitted their histories for the Hydro Hall of Memory being established at Niagara Falls.

The Hall of Memory will be officially opened February 25 to coincide with the Toronto convention of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities. Guests at the ceremony will include officials of the two organizations and representatives from Ontario Hydro. Convention delegates will see a film of the opening at their luncheon three days later. Souvenir programs of the event will also be available.

Members of the organizing committee have recommended that while the historical write-ups should be stored in the Hall of Memory for reference purposes, individual utilities must bear responsibility for the preparation and distribution of condensed versions.

Sitting on this Centennial project committee are the chairman Dr. V. S. Wilson, Etobicoke Hydro; Dr. R. H. Hay, Kingston PUC; John McMechan and E. F. Burbank, Toronto Hydro; Stanley Webster and L. W. Smith, Tillsonburg PUC; J. A. Williamson, Niagara Falls Hydro; J. A. Hammond, Hamilton Hydro; E. C. Nokes, OMEA secretary-manager; W. R. Mathieson, AMEU secretary-manager; Ontario Hydro commissioners D. P. Cliff and Lt. Col. A. A. Kennedy; and J. A. Blay and T. E. Dietrich of Ontario Hydro.

The OMEA-AMEU-Ontario Hydro Hall of Memory will be situated in the Sir Adam Beck-Niagara Generating Station No. 1 and will be included in the Hydro tour undertaken by more than 100,000 persons each year.

Plaques at the entrance will list the names of past and present OMEA and AMEU presidents and secretaries together with past and present Ontario Hydro commissioners and chief executive officers. A lighted map will indicate stages in the development of municipal power while panels will portray the history of Hydro from before the pioneering days of Detweiler and Beck up to 1921 and the opening of the Sir Adam Beck No. 1 plant. Significant pieces of old electrical equipment will also be on show.

Up to publication, histories had been received from the following utilities:

Amherstburg, Beamsville, Blenheim, Bolton, Bracebridge, Bradford, Cannington, Capreol, Casselman, Chalk River, Chatham, Cobourg, Collingwood, Deep River, Delhi, East York, Elmwood, Etobicoke, Fergus, Goderich, Grand Valley, Guelph, Hagersville, Havelock, Hespeler, Iroquois, Kingsville, Kitchener, Leamington, Massey, Maxville, Meaford, Milverton, Mount Forest, Napanee, Nepean Twp., New Toronto, North York Twp., Norwich, Oakville, Oil Springs.

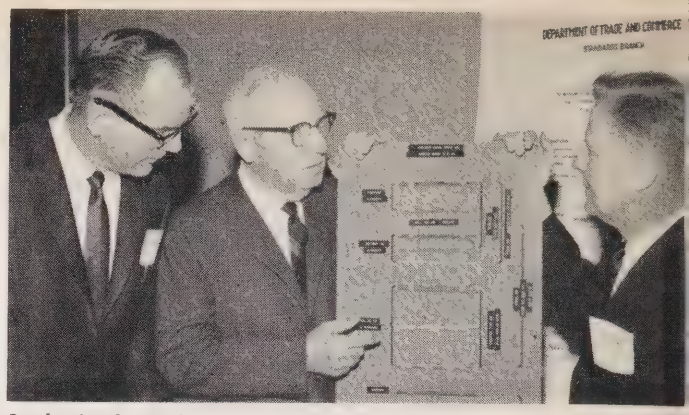
Oshawa, Ottawa, Penetanguishene, Point Edward, Port Arthur, Port Colborne, Port Credit, Preston, Rainy River, Ridgetown, Rosseau, St. Jacobs, St. Mary's, Sandwich West Twp., Sarnia, Schreiber Twp., Seaforth, Shelburne, Springfield, Stirling, Stouffville, Stratford, Streetsville, Thornbury, Tilbury, Toronto, Wardsville, Waterford, Waterloo, West Lorne, Whitby, Woodbridge. □

## Of meters and men

Like its predecessors, the 1967 Metermen's Workshop was noted for its emphasis on the "work" part of the name. Two hundred and fifty-eight delegates, representing 104 utilities, Ontario Hydro, manufacturers and other interested organizations, put in a 13-hour first day and bounced right back for a further five hours the second day.

The Workshop, sponsored by the Metering and Service Entrance Equipment Committee of the Association of Municipal Electrical Utilities, has been held every November since 1962.

In the keynote address, E. F. Burbank, president of the AMEU, told delegates of the forthcoming period of tremendous growth which will see the load of utilities doubled in 10 years. "One purpose of a workshop such as this," he said, "is to enable us to become aware of what is going on, to explore and to develop so that we may always be ready to perform our work efficiently as progress demands."




*Lack of color coding can mean a "B".*

Highlight of this year's sessions at Etobicoke's Skyline Hotel presentations by representatives of the Department of Trade and merce, which is responsible for checking meter accuracy.

Ken Cryer, chief of the department's electricity and gas division, s off with a talk on the "Verification of Metering Installations". It wa lowed by a slide presentation which illustrated why the department utilities "B" ratings instead of "A", and so on. It was apparent tha single factor which pulled most utilities down on the rating scale wa lack of wire color coding. Grades are based not only on the correc of the installation but also the ease with which it can be verified. shortcomings were lack of polarity markings, inaccessible nameplate poor location of the meter equipment.

Mr. Cryer is seen in the photograph discussing color coding with shop chairman Don Smith, left, and Ray Coles, right, AMEU assistant ager and engineer.

This part of the program ended with a talk by G. E. Anderson, department's standards branch, who outlined plans to introduce met spection on a sample basis. Under the plan, a utility will provide in tors with a list of meter serial numbers from which 10 to 15 per cen be selected at random for actual testing. If the tested meters are a ably accurate, all meters on the list will be assumed correct and cer for two years. This would lessen the inspector's work and reduc number of meters out of service for testing.

Delegates also heard talks by a manufacturer, the Electrical Ut Safety Association and municipal metermen. Subjects ranged fror fusing of potential transformers to metering installations and their saf

## A strain on demand?

Federal Power Commission chairman Lee C. White urged U.S. electric ties to look well into the future when forecasting demands on their cap He cited the possible development of electric automobiles as an exa of a potentially dramatic increase in future power needs.

Mr. White feels the implications of electric automobiles are so impo that he has invited a group of manufacturers to meet him to discuss tables. Development of a commercially practical car is likely withi next five or ten years, but controversy rages on whether they w powered by a form of storage battery or fuel cells.

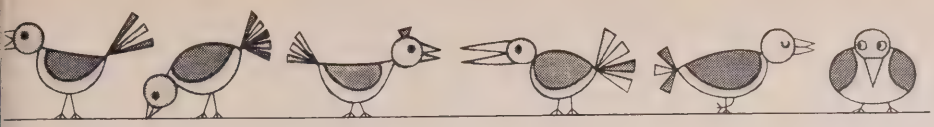
## October energy production

Primary energy provided by Ontario Hydro in October totalle 4.09 billion kilowatt-hours, an increase of 8.5 per cent over th same month a year ago.

For the first 10 months of 1966, the total is 39.13 billio kilowatt-hours, up 10.2 per cent over the same period last year.

Adjusted for seasonal influences, primary energy demand i October was 4.06 billion kilowatt-hours, 1.6 per cent more tha the previous month.

The seasonally adjusted total for October represents 48.6 billion kilowatt-hours at annual rates. This is 349.87 per cen of the energy demand in 1949. [



# off the wires

his being the ho-ho-ho season, and all, it may be the best time to tell mother she's on the out. But forewarned is forearmed and she uld know about Roberta. Weighing in at 65 nds and measuring a fascinating 38-24-36, erta is presently demonstrating electrical ap-nces in the houseware department of Macy's ement in New York.

nstead of sugar and spice, she's made mostly rubber and metal and unlike most little girls, she ys orders without question. Roberta the robot polite, too. On one occasion she dropped a dless electric carving knife she was demonstrat- and murmered a recorded excuse — "Sorry, e just had my hands oiled."

Roberta's movements are controlled by punching ttons on a panel located nearby. She looks so l that Mr. Hardman of the company who created has taken desperate measures to establish her ut of this world" identity. He removes her head m her shoulders at the start of each perform-ce and opens a panel in her back to display ricate-looking electrical circuits.

"Her biggest problem," Mr. Hardman says, "is t she has no self-control."

Too bad, but how this sets her aside from the st of the gals isn't explained. Addicts of automa-n will consider the odd tantrum a small price pay for a female who can be turned on and off th the flick of a finger.

And barbers will be joining mother on the side-es of our brave new world according to a French ventor who thinks he's perfected an automatic, -electric haircut.

He's been granted a patent in the United States r a machine which will cut hair in accordance th a recorded pattern of the individual customer's yle preference.

Clippers and combs are held by overhead ap-ratus and the victim can stop the electric motor th a foot pedal if he makes it in time. Like most ings these days, the haircut is programmed and e operation carried out by means of a perforated pe which throws the appropriate relays and vitches.

With the haircut itself taken care of, automating e other tonsorial services should be a cinch. pecial hi-fi records could be provided, alternating alian opera with dissertations on the current olitical scene.

Shaves are something else again and too gory contemplate in this particular context. Mack the nife would look like a boy scout compared to oberto the robot barber with a straight razor and short circuit. Eye-level brush-cuts we can do ithout.

Teachers are another group being eyed by the omputer as ripe for obsolescence. Take the latest ducational caper in Philadelphia. Electronic tutors ook over the pointers at seven public schools here this fall. Complete courses, beginning with nath, science, history and English, are program-ned into two central computers. The computers re linked to keyboards at the various schools and they feed information to the students as fast as their little gray matters can absorb it.

How fast is too fast? Naturally, the machines will conduct examinations as they go along and they'll dole out the dunce caps without a flicker of emotion.

A few teachers will be retained, we presume, to help the little rascals with their galoshes, interpret arm signals to establish bathroom priority, and rule on the literary merit of notes excusing junior for missing an important tape on the extra-marital activities of the bumblebee.

■ Nor is there room for smugness on the part of the boys behind the computers — the programmers themselves. Treacherous and lacking even the meanest of human virtues, the computer wouldn't crack a diode in biting the hand that feeds it. In fact, a federal Department of Labor spokesman suggests that even before the relatively new occupation of computer programming has been fairly launched, the seeds of its obsolescence may have been sown. He cites new advances in ready-packaged adaptable programs for computers and technical developments in assembly, compiling and common language programming techniques as possibly constituting the handwriting on the wall.

■ The prospects, it seems to us, are not reassuring. So long as we remain in charge of the feeding process we can expect to maintain a modicum of control. But if the time ever comes when the IBM machine turns up its nose at our saucer of data and purrs on content with a dish of its own devising, we'll be in serious trouble.

We did elicit some reassurance from a recent visit to the printers where we were able to re-affirm our deep-rooted belief in the essential stupidity of the machine. Pausing for a moment in the highly automated bindery department, we observed all manner of contrivances going through a grotesque routine of calisthenics which probably accounted for their muscle-bound condition between the ears. Cams shuttled in and out, arms were raised and lowered with idiotic precision and steel fingers clawed at fine paper they weren't even able to feel.

One particular Smart Alec was lifting up text book covers and handing them over to its mechanical mate with an aplomb well calculated to intimidate the mortal bystander. We couldn't supress a guffaw when the assembly line ran out of covers and our foolish friend went on grabbing the air until, of all things, a man walked over and turned him off.

Nor could we help wondering what all these well-oiled dimwits would do for kicks after work. Not a damn thing, we'll wager, until some little old bleary-eyed human feeds them their juice next morning and starts up the ball-bearing ballet all over again.

■ Talking about dim bulbs, there's been quite a bit of controversy lately over the lack of longevity of modern electric lamps, arising, we suspect, from a critical U.S. congressional report. Bulb life could easily be extended at very little cost to the householder, the report claimed.

In fact, long-life bulbs ranging up to 10,000 hours have been available right along — it's just that most of us have been in the dark about our lights. It is largely a matter of voltage, they tell us, with the standard, 120-volt bulbs tending to become overloaded at peak periods on the system when voltage fluctuations are most likely to occur. This shortens their life.

The long-lasting jobs are rated at 125 and even 130 volts, providing a margin of safety during these electrical ups and downs. The 125-volt number is likely to last 80 per cent longer than its 120-volt counterpart at little additional cost.

Lumens-per-watt are another kettle of fish and these tend to sink with the longevity of the bulb. In other words, brightness must be sacrificed for long life.

It's all very illuminating and we'll go for the long-lifers for hard-to-reach fixtures and other places where light level is not critical. What's a lumen or two if it's going to cut down on the mountain climbing and let the old family lamplighter get in a wink or two over the prescribed two score?

■ Giants may be a rather fearsome subject upon which to bring our final ruminations for 1966 to an end but they do go ho-ho-ho at the drop of a hat and so qualify on a seasonal basis. This one is doubly entitled to mention because he hates peas, loves little children and wears the Hydro symbol on his hard hat during the off-season for gianting.

It all came about when the Toronto Telegram set out to find a person of the right proportions to preside over the "Giant's House" at a Christmas Fairyland the newspaper is sponsoring in Toronto. But giants, it soon turned out, with a benign expression and no disposition towards chasing children down beanstalks, are hard to come by.

After a search that spanned nearly every major city in the United States and Canada, they found their man. He was wielding a hammer and saw as a carpenter with Hydro on the Mountain Chute development. The trail led to the Madawaska country through a circuitous route starting at the National Employment Service and ending 200 telephone calls later at Calabogie.

Malcolm Easton — or the "Friendly Giant" as he is billed in Toronto — meets requirements very nicely. A trifle on the stubby side, perhaps, at six foot nine, he's easy to get along with, if not quite so jolly as his green counterpart, and he can't be too dangerous because he dates a 5' 4" girl.

Still a bit touchy perhaps, after that Grey Cup fiasco, we think Mal might have helped us out in the pocketbook department by offering his services to the Ottawa Roughriders. There'd still be plenty of time for beanstalks after a giant touchdown or two. But we'll try to shake the bah! humbug! approach and get with St. Nick and those tall, happy people with the Christmas spirit.

And so, with a ho ho here and a ho ho there, we'll say Merry Christmas to all, and a happy New Year.

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# 1967




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January 1 — New Year's Day
March 24 — Good Friday
May 22 — Victoria Day
July 1 — Canada's 100th Birthday
August 7 — Civic Holiday
September 4 — Labor Day
October 9 — Thanksgiving Day
December 25 — Christmas Day

February 27 — 58th OMEA-AMEU Convention
April 28 — Opening of Expo 67
October 27 — Closing Day Expo 67

**ontario hydro news**

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